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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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LAKE COMMERCE.

The War Department is asking Congress for \$20,000 additional for the survey and examination of a great waterway between the Great Lakes and the Atlantic ocean. Its work involves plans for the control of the level of Lake Erie by dams at Buffalo, the development of the St. Lawrence river, the improvement of the Hudson, and other surveys and examinations. The Deep Waterways Commission asks this \$20,000 in addition to the \$465,000 formerly appropriated.

The importance of the commerce of the Great Lakes is increasing every day. The growth of lake marine is a phenomenon. In 1898 it seemed to be too great for the trade; in 1899 the traffic practically swamped it. The Duluth News-Tribune pertinently states: "With more than half the country's tonnage of steamers exceeding 1,000 tons register, on the lakes, any attempts to deny that the welfare of the lake trade is vital to the nation would be futile. The traffic through the 'Soo' canal dwarfs the business of the great Suez waterway. Whatever may be the figures of one season in lake trade, the next is sure to surpass it."

With such a showing it is not likely that the demands of the Deep Waterways Commission will be overlooked by Congress, even though the river and harbor bill should fail.

UNITED STATES SHIPBUILDING.

The total number of vessels built and officially numbered by the Bureau of Navigation during the calendar year just ended, was 954, of 267,642 gross tons, compared with 955 of 237,600 gross tons for the year ending 1898. Steam vessels built during 1899 numbered 421 of 160,132 gross tons, compared with 550 of 169,602 gross tons for 1898. Sail vessels numbered 533 of 107,510 gross tons, compared with 405 of 66,996 gross tons for 1898. The increase is almost wholly on the Atlantic and Gulf coasts, where 650 vessels of 163,519 gross tons were built, compared with 538 vessels of 86,005 gross tons for 1898. On the Pacific coast only 114 vessels of 20,087 gross tons were built, compared with 240 of 61,923 gross tons for the previous year. This falling off in construction on the Pacific coast, in spite of the fact that the Alaskan trade next year will be very large, is due partly to the belief that American merchant vessels hitherto employed as transports to Manila, will be released and enter the coasting trade in the spring. Construction on the lakes comprised 70 vessels of 72,094 gross tons, compared with 66 of 75,067 gross tons for 1898; on the Mississippi and western rivers 112 of 11,942 gross tons, compared with 111 of 14,605 gross tons for 1898. Of steel steam vessels, almost wholly for the

coasting trade, 75,313 gross tons were built on the seaboard, and 50,836 gross tons on the Great Lakes, compared with 39,219 gross tons on the seaboard, and 47,410 gross tons on the Great Lakes for 1898. The construction of 75,313 gross tons of steel steam vessels on the seaboard is the largest output of this description in our history. For purposes of comparison it may be noted that unofficial figures show that one British shipyard during 1899, built 82,634 gross tons of steel steamships, and another built 77,501 gross tons during the year. Eighteen British shipyards during the past year launched each over 30,000 gross tons of steel steamships. The total output for the United Kingdom for the year has not been ascertained, but it will exceed 744 steamships of 1,363,318 gross tons, practically all of which were steel, built during 1898. The returns for the first six months of the fiscal year show the construction in the United States of 527 vessels, of 133,487 gross tons, compared with 511 vessels of 130,154 gross tons for the corresponding six months of the previous fiscal year. None of the foregoing figures include unriggered barges and canal boats. Including these, the total documented tonnage built in the United States during current fiscal year bids fair to be somewhat over 300,000 gross tons.

THE ERIE CANAL SERVICE.

Of the forty million tons of traffic which pass through the Detroit river in the course of a year on its way to the East, not more than three million can be taken through the Erie canal, though, according to Mr. E. P. North, who has an instructive article on "The Erie Canal and Transportation" in the January number of the North American Review, there is no reason why the great bulk of it should not find economic transit over the waterway. To that end it would be only necessary to widen and deepen the canal so that it might accommodate lake steamers of considerable tonnage. Mr. North advocates this course, not only because it would cheapen transportation, but because it would stimulate the establishment and development of industries of all descriptions along the borders of the canal. Mr. North touches upon the advantage derived from the canal by commerce when it was first opened:

"The canals of New York have been of great service to the City and State of New York and to the country. When the Erie canal was opened for through traffic, in 1825, boats of sixty tons superseded wagons of one to one and a quarter tons. The cost of freight between Buffalo and Albany fell from \$100 to \$10 per ton. The consequent increase in traffic and wealth justified an enlargement, commenced in 1836, whereby boats of 240 tons burden replaced those of 60 tons, and canal freights fell to three dollars per ton; it also developed the commercial confidence necessary for the construction of the New York Central line and the Erie Railroad."

COALING AT SEA.

The naval board which conducted the trial of the Miller coaling system has submitted its report to Admiral Bradford, U. S. N., chief of the equipment bureau. The board conducted these experiments with the battleship Massachusetts and the government collier Marcellus, the battleship towing the collier, which supplied the former with coal in 800 pound bags by means of the towing lines, which made an aerial trolley. The tests were conducted under varying conditions of weather, and in the opinion of the board were eminently successful. In weather as heavy as it was practicable to coal a ship under any conditions, the devices transported about 20 tons an hour safely. Altogether the board concludes that the apparatus will be of value during war time, and consequently the plant with which the experiments have been conducted will be paid for by the government under the terms of the contract made last summer.

FUTURE LAKE TRAFFIC.

Interviewed this week regarding the future prospects of the lake marine business Harvey D. Goulder, Esq., counsel for the Lake Carriers' Association, stated as follows:

No man had a broader, deeper interest in lake commerce than the late Gen. O. M. Poe, who, as a member of the United States Engineer Corps, had the execution, and in an unusually large measure, the direction of improvement of the lake waterways. His estimate of that commerce and its future has been often quoted, yet it remains the best answer to a question concerning the future of lake commerce. It is as follows:

"Surely such a commerce deserves every aid and encouragement that can be extended to it. Give it channels practically navigable upon a draft of twenty feet and it needs no prophet to predict a wonderful growth, but only a prophet could foretell its degree. For nearly thirty-five years I have watched its increase, but neither I nor anyone else within my knowledge has been able to expand at the same rate. The wildest expectations of one year seem absurdly tame the next."

This statement of General Poe was made in 1890. Each succeeding year has but emphasized his statement.

When our movement of iron ore had reached ten millions, and I predicted an increase of twenty millions, an iron ore man said the prediction was ridiculous, and asked me "where will the market be found for so much ore from the Lake Superior district?" Not more than half the time has elapsed and we have reached the twenty million mark. We may expect a vast increase, possibly even in the same ratio.

"As long ago as 1873 prominent men advocated a low railroad bridge across Detroit river with draws of 166 feet," Mr. Goulder said. "To-day, the survivors of those men concede that a 1,200 foot span, with sufficient height for clear head room, is the least that should be advocated by anyone."

"The ton-mile service of the lakes this year will exceed one-third of the ton-mile service of all of the railroads of the United States. The open waterway of the Great Lakes regulates the price of transportation. The price of transportation in this country is of importance sufficient to rank this with the great questions before the public upon which national campaigns are conducted. The merchant fleet of the Great Lakes will bear comparison with any fleet in the world. The ship of ten years ago is not reproduced to-day. The lake vessel may or may not have reached the maximum size. I think it has not, but that as shore facilities shall increase and as channels shall be enlarged there will be further increase in size of steamers."

"The notion that money expended in channel improvements is for the benefit of the ship-owning class is too prevalent. Nothing could be farther from the truth. It is a matter of national concern, having a broad effect directly and indirectly on the entire country. The supremacy of iron and steel products, upon which we are entering, it is within bounds to say, is the outgrowth of the lake waterways and is dependent directly upon this means of cheap transportation."

THE ILLINOIS CANALS.

Many writers are misinformed in regard to the canals in the State of Illinois. The Illinois and Michigan canal runs from Chicago to LaSalle, Ill. The Chicago drainage canal runs from Chicago to Joliet, Ill. The Illinois and Mississippi canal, commonly called the Hennepin canal, when completed, will run from a point on the Illinois river two and a half miles up the river from Hennepin, Putnam County, Ill., to the Mississippi river, Milan, Rock County, Ill., being the last town on its course, and which is a few miles south of Rock Island and Peoria Railroad.



DULUTH-SUPERIOR.

Special Correspondence to The Marine Record.

The volume of freight handled at Superior docks during the seven months of navigation in 1899 was more than half the total handled during the entire year through the famous Suez canal, Europe's great highway to the Orient.

The total receipts of grain this year amounted to 78,202,347 bushels, as compared with 85,842,913 bushels in 1898. The shipments of grain amounted to 69,091,395 bushels, as compared with 76,154,071 bushels in 1898. Corn, barley and flax show increases made in both receipts and shipments, while wheat, rye and oats have fallen off from last year.

Whaleback barge No. 115, which went ashore on Pic Island on the north Shore of Lake Superior, will spend the winter where she lies. Captain N. W. Smith, agent for the owners at Sault Ste. Marie reports that the boat has sustained extensive damages and that it will not be practicable to try to release her this winter. The wrecking expeditions that it was intended to send from the Sault and Marquette will not be ordered out. The steel steamer Harlem came out of the "winter quarters" on the rocky shore of Isle Royale in pretty good shape this fall and the whaleback may be equally fortunate next season if she does not founder in deep water.

The American Steel Barge Company was awarded \$1,050 damages by Judge Lochren in Minneapolis Wednesday against the Duluth-Superior bridge company. The suit was the result of a collision between whaleback barge No. 134 and the bridge June 22, 1899. The tug Record was towing the barge down from the ore dock, and the tender of the Duluth-Superior bridge failed to open the draw as soon as expected by the boats. As a result of the delay the barge ran into the bridge and was considerably damaged. Judge Lochren held that the bridge company was responsible for the accident, and allowed damages to the amount mentioned.

The report of the custom officers of Superior and Duluth shows that the receipts of coal this year were almost identical in amount with those of a year ago. Superior received last year, in round numbers, 1,800,000 tons, and in 1899 the report gives the receipts as 1,787,100. Duluth showed a little gain. This year the receipts were 878,534 tons, against 838,000 tons last year. The railroads between the head of the lakes and the Twin Cities have again put up the rates from 75 to 90 cents per ton on soft coal. They did that a short time ago, but the State Commerce Commission of Minnesota had not given its permission, and they were compelled to retract. That permission has now been given, on the ground that the rates on soft coals were too low in comparison with other commodities.

There is not a port on the chain of lakes that is making any greater advance in commerce than Superior is. During the season just closed the receipts and shipments amounted to 4,837,812 tons of freight, or about one-fifth of the total commerce of the "Soo" canal for the year. This commerce was valued at \$82,275,323, an increase of nearly \$9,000,000 over 1898, which was heretofore the largest year's business in the history of the port. To show the rapid growth of Superior's marine commerce it is but necessary to make a few comparisons. In 1883 there were 21 arrivals and clearances with a tonnage of 13,033, valued at \$115,104. Six years later, in 1889, there were 868 arrivals and clearances with a tonnage of 1,121,038, and a commerce valued at \$7,959,675. Five years ago, in 1894, there were 2,000 arrivals and clearances with a tonnage of 2,830,415, valued at \$42,416,712. In other words, the value of Superior's marine commerce is many hundred times what it was in 1883, over ten times what it was ten years ago and double what it was in 1894.

The Duluth city engineer Mr. McGilvray has evolved a scheme that is designed to solve the old problem of bridging the Duluth ship canal, a question that has agitated the city at different times in the past, and also settled the Park Point ferry question. The scheme is simply to erect a steel tower 192 feet on each side of the canal and build between the pillars a steel suspension tramway consisting of a horizontal platform supported by strong steel cables. On the bridge, the base of which is to be 152 feet above the water, are several heavy steel tracks on which run rollers and suspended from these by huge steel cables is a car 25x30 feet. The car would be about eight feet above the water, or just enough to clear the pier. It will be intended for all kinds of vehicles in addition to pedestrians. Mayor Truelsen, of Duluth, is enthusiastic over the plan and has sent a letter to General Wilson, chief of the United States Engineer Corps, asking his opinion as to whether the War Department will grant the city permission to erect such a structure. The mayor enclosed a blue print of the bridge and also set forth the conditions that prevail at the canal.

CLEVELAND.

Special Correspondence to the Marine Record:

Ice is several inches thick off this port, and some difficulty is experienced in getting out to the waterworks cribs.

The dry docks are kept fairly busy at this port, among others the Mutual line boats are undergoing overhauling and repairs.

Mr. Robert Logan, of this city, has been appointed surveyor for the British Corporation for the Survey and Registry of Shipping of Glasgow.

Can iron ore on the docks be assessed for taxation? The question is brought up this week in the court of common pleas, in a suit against the Cleveland Iron Mining Co.

The calendar issued by the Nickel Plate road will be mailed to any one who will send their address to the general passenger agent. Nickel Plate road, Cleveland, O.

H. D. Goulder Esq., is visiting Montreal this week, in the interest of the new grain forwarding syndicate. It is reported that upward of \$5,000,000 will be expended on this project.

The carpenters at Devney's yard, Ashtabula, laid down their tools this week, pending an increase of 2½ cents an hour in wages. Work was being done on a new tug for the Co-operative Fishing Co., and repairs on the steamer H. J. Johnson.

In about two weeks more the American Ship Building Co. will launch from their yards in Lorain, the first of the 500-foot fleet building to the order of A. B. Wolvin and others. Two of the fleet of four are being built at the West Bay City shipyards.

C. A. Morgan, formerly manager for the Cleveland Tug Company, has just returned from a trip to Denver and the West. He was out in that vicinity looking after some property, among which is certain mining property that has proved to be valuable.

There has been an organization effected among the tug men, known as the Tug Pilots' and Engineers' Association. The local officers elected are W. J. Dwyer, president; Chas. Ralph, vice president; Clarence Pomeroy, secretary. It is said that all of the tug men on the lakes will soon be organized into similar unions.

Mr. John A. Donaldson will take charge of all the Lake Erie docks of the syndicate known as the Pittsburg Coal Co. Mr. S. H. Robbins will attend to the chartering of vessels. Messrs. M. A. Hanna & Co., and Pickands, Mather & Co., will handle their business as in the past. Mr. Morton Mullen and J. W. Ellsworth & Co. are the only local independent shippers from the Pittsburg district.

The schooner George H. Warmington, of the Minch fleet, was sold this week to Jerry McCarthy, of Buffalo, for \$6,500. She will be put in the lumber trade. The Warmington was built by Nichols, at Vermillion in 1872. Her net tonnage is 532 tons. It would surprise no one if the Minch Transportation Co. placed an order for a large steel steamer as soon as the market for material slackened up a trifle.

Mr. Douglas Brews has been appointed shore engineer of the Mutual & Menominee line of steamers. Mr. Brews was with the Globe Iron Works Co. for a number of years, and he also worked for the Cleveland Ship Building Co. He will be in the office with Capt. George P. McKay, manager of the boats. Before the Menominee fleet was chartered by the Canada-Atlantic Co., Mr. Charles B. Calder, now of the Detroit Ship Building Co., was shore engineer of the fleet, since which time the position has been vacant.

At the last regular meeting of Cleveland Lodge, No. 4, of the Shipmasters' Association, the principal, and, in fact, the only business transacted, was the election of the officers for the ensuing year. This resulted as follows: President, Capt. Ralph E. Byrnes; first vice-president, William Ames; second vice-president, Samuel Allen; treasurer, Capt. Thos. Jones; financial secretary, Capt. Olaf Oleson; recording secretary, Capt. Lewis Allen. In addition to these Capt. Byrnes was elected the delegate to the grand lodge, which meets in Buffalo January 30, and Capt. Carlton Graves was elected his alternate.

Cases to come before Judge Ricks at this term of the district court: John Corrigan, et al vs. steamer Mesaba; R. C. Jones vs. steamer John Mitchell and cargo; C. C. Ryan against cargo lumber; Lence Parks vs. steamer Volunteer; Geo. Nestor against lumber cargo; Edward Hines & Co. against lumber cargo; Hiram Henderson vs. steamer W. P. Ketcham; Thomas M. Ryan against lumber cargo; Ernest Tanner, Frank Laughlin vs. steamer Montana; L. P. & J. A. Smith vs. steamer Rube Richards; Paul O'Donnell, Harry Wright vs. steamer Bulgaria; The Vega Steamship Co. vs. steamer Rosedale; Progress Transportation Co. vs. steamer Samuel Mather; John Stang vs. barge Magnetic; American Steel Barge Co. vs. steamer W. L. Wetmore; the Saginaw Barge Co. vs. steamer Mineral State; Emma Bartleson against F. G. Dumford.

Col. Jared A. Smith, Corps of Engineers, U. S. A., will disburse over two million dollars in improving the harbors at Toledo, Lorain and Ashtabula next season. The outlay at Toledo will be about \$950,000, Lorain \$695,000 and Ashtabula \$530,000. Cleveland is also liberally taken care of by the Federal Government. It should be understood that these improvements are rendered possible through congressional appropriations, for the good and welfare of general commerce and the country at large; there is no special or

extra taxes exacted from the locality directly benefited or on interests connected therewith. It is sufficient to show that the commerce, present and prospective, warrants an outlay, and the River and Harbor Committee, through Congress, does the rest. The conservancy and improvement of navigable waterways, are under the control of the Secretary of War, and recommendations are submitted through the district officers of the Corps of Engineers, U. S. A.

Harvey D. Goulder Esq., gave the municipality a pertinent roasting this week, when speaking about the future progress of lake commerce, Mr. Goulder said: "I cannot forbear a word to the people of Cleveland, not the vessel owner, not the iron ore dealer, but the people generally, who are interested in the progress of the city and the employment, comfort, and prosperity of the people congregated here. This is the natural assembling point for the material which enters into the manufacture of steel; over and again the most critical expert examination has demonstrated the advantage of this place. Several large institutions have established elsewhere for want of available space. Criticism has been made of the expenditure by the city directed to the development of the valley through which our river extends. Such criticism is ill-timed and ill-considered. Again, on the lake front, we have trifled with our opportunities. Three and a half years ago the expenditure of \$1,354,000 was authorized here as the result of a spasm of energy, when the Chamber of Commerce sent a very strong committee to appear before the River and Harbor Committee, at Washington. It was provided as a check upon our aggressiveness that this money should not be expended more rapidly than at the rate of \$400,000 a year, according to which the money might have been expended by this time. There has been expended, however, in this time, probably one-third, but not over one-third of the amount. We stand here entitled to large improvements; vital to the interests not alone of Cleveland, but of Northern Ohio, but we stand in that sort of lethargy which accepts benefits forced upon it, without using to the full those which we already have. Our representatives in Congress have led the way, and are a long distance in advance of the community they represent. The question to those men who have studied the situation must constantly recur: How long will the people of Cleveland sit with folded hands and have the prosperity incident to the tremendous lake commerce now being transacted, but apparently yet in its infancy, thrust upon them without seeking its fullest benefit?"

MANITOWOC.

Special Correspondence to The Marine Record.

Capt. Peter Kilty, of the ferry steamer Pere Marquette, Mr. Bruce, engineer, made fifty-two round trips, Manitowoc to Ludington, during the month of November. This is equivalent to about 6,450 miles, with full cargoes each way. Capt. Kilty is an experienced winter navigator of commanding presence and courteous demeanor.

The Manitowoc branch of the Marine Engineers' Benevolent Association has elected the following officers: President, Philip Roth; vice president, Frank Heffernon; corresponding and recording secretary, Joseph Weber; financial secretary, John Jorsch; treasurer, Philip Roth; conductor, Edward Dusold; chaplain, Fred Larsen; doorkeeper, Joseph Gill.

There is quite a fleet of vessels in winter quarters at Manitowoc, comprising the steamers Spokane, Olympia, Sitka, Yakima, Charlemagne Tower, Jr., Hesper, Cadillac, Davidson, Walter Vail, Waverly, V. Swain, Raleigh, J. S. Fay, George Stone, Tokio, J. S. Christy, City of Cleveland, Columbia and Maurice B. Grover, and tow barges Yukon, David Z. Norton, Baltic, Aberdeen and Rosa Sonsmith.

The business done at this port during the year 1899 constitutes a remarkable showing for Manitowoc and will surely be an important factor in having this harbor declared a harbor of refuge by Congress. All previous records as to vessels entered and cleared have been broken. The books of the collector of customs show that the number of vessels entered during the year 1896 was 1,104; during the year 1897 it was 1,687; during 1898, 1,914; while during the year just closed the total number of entries was 2,026, with a tonnage of 1,706,685.

At the Goodrich Transportation repair shops at Manitowoc, repairs will be made during the winter to the steamers Olympia, Sitka, Yakima, Waverly, V. Swain, Raleigh, Charlemagne Tower, Jr., Cadillac, Spokane and Lawrence, in addition to the necessary annual work on the Goodrich fleet of passenger steamer and considerable city work. These shops are equipped with the most modern tools, and in addition to their regular men will give employment to a number of extra machinists after the first of January. The machine shop has four lathes, from 12 to 16 swing, which will take between centers from 12 to 30 feet; shapers and planers will take from the smallest to 48x48x16 feet; pipe cutting and threading machinery from the smallest to 10 inches; portable firing bars to bore cylinders from 3 to 100 inches and 16 feet stroke, which are driven by electric motors, compressed air or steam; drill presses from the smallest to 80 inches radial drill, with vertical milling and topping attachments. A brass foundry is attached to the machine shop, as well as a blacksmith shop with four large fires, the tools including a steam hammer of the Morgan pattern, powerful shears and punches. In connection with the works is a first-class pattern shop. All work is in charge of Julius Hanacheck, the foreman, a skillful mechanic, who has had many years' experience.

CHICAGO.

Special Correspondence to The Marine Record.

The fire boat Illinois patrols the river daily and breaks up the ice to prevent navigation on the river becoming impeded.

The steamer Gladstone is in one of Miller Bros. docks receiving a thorough re-calking all over. She has had her masts replaced by pole spars which have greatly improved her appearance. Capt. Paul Howell is superintending the work.

Wickes Bros., Chicago, have issued a list containing illustrations and descriptions of boiler and shipbuilders' tools, such as heavy plate rolls, horizontal and vertical, punches and shears, flanging clamps, hydraulic flanging and riveting machines, etc.

At the Chicago Ship Building Co's yards the steamer J. C. Lockwood was in dock for some general repairs and calking; the steamer George N. Orr had four plates taken off, re-rolled and re-placed, some frames straightened and new stern bearings; the steamer Penobscot is receiving extensive bottom repairs.

The Crosby Transportation Co. has decided to take off the boats which heretofore have run between Grand Haven and Muskegon. The Naomi and Nyack have been making the run from Milwaukee to Grand Haven and Muskegon without interruption. During the winter they will run only as far as Grand Haven and from there to Muskegon the freight will be sent by rail. This is done in order to overcome the difficulties which are caused by ice. The report that a new line of steamers would be started between Grand Haven and Muskegon is said by the people in a position to know to be entirely without foundation.

When the season opened here there was a hard coal famine, rates opened at 40 cents per ton from Lake Erie ports while only 30 cents was paid to the head of Lake Superior. The dock strike at Buffalo held shipments back and freight rates went gradually but steadily up to \$1 to this port and Milwaukee during September and October, dropped to 75 cents in November towards the close of which month rates again went to \$1 and the season closed at \$1.25 with a shortage for the winter supply. The decrease in receipts of anthracite by lake was upward of 100,000 tons as compared with last season, so that there is likely to be a much greater shortage next spring than there was last, although all rail shipments have been nearly 400,000 tons more than last season and this will in a measure offset the lesser shipments by lake.

When in Chicago recently, William J. Conners said: I have the support of all the large grain interests of Chicago and Duluth. The Montreal route will afford an all-water way to the sea, which can compete with the railroads because of its cheapness. Montreal is 300 miles nearer Liverpool than is New York, a decided advantage. Besides the three elevators at Montreal, we expect to build an elevator of 1,500,000 bushels capacity at Port Colborne, Ont., sixteen miles from Buffalo, and through grain going to Montreal in large cargoes will be broken there. During the season just ended only a little more than 21,000,000 bushels of the vast amount of grain which came to Buffalo from the west by lake and rail was shipped east by the Erie canal. The great bulk of it went by rail. It may be that the labor troubles which Mr. Conners was involved in last season may prove a roorback, sort of a boomerang to the people, especially the grain scoopers and their leaders who tried to down W. J. by all means in their power. Looking at it from this end of the line it is easily seen that every extra bushel that goes through the Welland canal is so much less for the Buffalo scoopers to handle. Mr. Conners seems to be a fighter and one that will hit back every time, besides, he has the influence and wherewith to do it.

SAGINAW.

Special Correspondence to The Marine Record.

The green bass fishing tug Rob Roy is getting an entire re-build here.

Carkin, Stickney & Cram have sold to Wickes Bros. Dredge No. 7 and scows, and one of their tugs.

The tug Andrew McLean has been hauled out at the ship yard and will receive a general overhauling.

Chief Engineer Ben Burrows has arrived home for the winter, having just laid up the steamer V. Swain, at Manitowoc.

Capt. Joseph Jones, for many years master of A. C. McLean's tugs here, died Saturday, at St. Mary's Hospital, of pneumonia.

The Higginbottom gasoline engine for launch work, is fast coming to the front, and a company will be organized to manufacture same here.

Since Tuesday last, when the tug Brown was in commission, ice has formed to the extent of 7 inches, and horse racing between the bridges is the sport of the hour.

Louis Kreis, engineer, boat-owner and owner of Power Block Machine Shop, died Friday, from heart failure. Mr. Kreis was a great favorite with the engineers, and will be sadly missed.

The following boats are wintered here: Steam barges W. P. Shaw, Maine, A. A. Turner, A. E. Shores, Pioneer. Tugs: Willie Brown, Andrew McLean, Rob Roy, Robert Boyd, Dewey. Barges: Dorcus Pendell, B. B. Buckhout, H. W. Hoag, J. L. Crowwaite, Exile, Katie Brainard, G. W. Wesley, Agnes, Monticello, and T. H. Cahoon. Steamers Josie and Ada.

BUFFALO.

Special Correspondence to The Marine Record.

The directors of the Great Northern Railway Co. have awarded the contract for the construction at Quebec of a million bushel elevator, at a cost of \$250,000, to Chapman & Co., of Buffalo.

A rumor has been afloat here this week that Mr. Farrington, manager of the Great Northern Steamship Co., will be mentioned as a likely candidate for the presidency of the Lake Carriers' Association. There is no lack of presidential timber, but if Mr. Farrington accepted the distinction he would add honor and dignity to the office, also marked capability.

The Great Northern railway has awarded the contract to Messrs. Chapman & Co., of Buffalo, N. Y., for an elevator in connection with its terminals at a cost of about \$250,000 and with a capacity of a million bushels. The Great Northern will own the elevator, and it will be located quite near the custom-house, the site being given by the harbor commissioners. Work will be pushed forward at once, and it is probable that the structure will be ready in time for the completion of the Great Northern's connection with Parry Sound.

Mr. Cuttle, manager of the Montreal Transportation Co., gives an emphatic denial to the report sent out from Kingston that the Conners syndicate had obtained an option upon his company's business. Asked whether any negotiations had taken place with this object in view, Mr. Cuttle said he preferred not to answer either in the affirmative or negative. Further questioned as to whether the syndicate was likely to absorb the company's business in the immediate future, Mr. Cuttle stated that an answer one way or the other would be premature.

Whatever the indications at upper lake ports may be there is every probability that brisk chartering will be done on coal out of this port at the earliest opening of navigation. Buffalo bid up and kept advancing the rate of freight all last season and consequently forwarded nearly three million tons of coal, chiefly anthracite, and mostly shipped to Chicago—Milwaukee. There is little thought of chartering a head and freight rates are certain to hold firm throughout the season on account of the large quantity of tonnage placed to carry iron ore.

Delegates from the Marine Engineers' Pilots', Firemen's and Shipmasters' Associations held a meeting this week in the office of Marine Surgeon Stoner, in the Postoffice building, with a view to drafting joint resolutions favoring the passage of a bill providing this port with a marine hospital. During the last few weeks this matter has been discussed freely in all the vessel offices in Buffalo. Representatives Alexander and Ryan are said to be doing their utmost to have the bill for a marine hospital at Buffalo passed at this session of Congress.

The next general meeting of the Grain Shovelers' Union, of Buffalo, will be held in St. Bridget's annex on Louisiana street on Jan. 8, when the name of the man chosen by the scoopers' sub-committee to take the grain unloading contract for next season will be announced. That was decided at a meeting held last Thursday evening by the delegates of the union. The meeting will be secret and nothing will be allowed to leak out until the matter is brought before the officials of the Lake Carriers' Association. It is hinted, however, that the rates for scooping will have to be increased over those of last season. The scoopers will be represented at the Lake Carriers' meeting by President McMahon, Mr. Mahany and the party who is chosen for contractor.

The season of navigation just passed opened on April 29th with the arrival of the steamer Wyoming and closed on Dec. 18th, with the arrival of the steamer Venezuela. The season just closed was a most fortunate one for underwriters. In the list of thirty-two total losses during the season, the vessels were almost without exception of a kind on which no insurance could be secured. In this matter of light losses the season was the most remarkable in the history of lake navigation, especially in view of the high freights that prompted the chartering of a number of vessels after the expiration of insurance. The months of October and November, seldom pass without a couple of heavy storms, but last year there were not half dozen days during which navigation was interfered with by heavy weather.

Buffalo Lodge No. 1, Ship Masters' Association, has arranged their annual ball and reception for February 1st, at the Ellicott Club. It will be in honor of the Grand Lodge, S. M. A. The committees are:

Entertainment—Captains Alexander Clark, E. C. Maytham, L. P. Goodale, Walter Robinson, Ed. F. Thorp, Harry Richardson, Charles McMillen, John B. Hall, M. Niland, John McCarty, John Perew, Parlance McFarlane, F. J. McCabe, Dan Coughlin. Floor—Captains F. D. Welcome, J. D. Green, George Stevenson, John Doochen, Ed. F. Thorpe, William Williams, Joseph Hulligan, J. H. Green. Reception—Captains F. J. McCabe, William Dickson, James Gibson, John Johnson, John McCarty, Charles H. Lewis, Parlance McFarlane, Charles McCrea, George H. Clark, T. Rahill, J. H. Dissetto, James Edgecomb, Lyman Hunt, Joseph Hulligan, William Williams, Dennis Driscoll, E. M. Smith, William Fletcher, James Doyle, P. O'Neil. Sentinels—Captains George Graham, W. S. Smith.

Although not quite to the same extent as last winter, yet there is a large amount of vessel repair and overhauling work to be done at this port before the opening of navigation. Manager Drake of the Inland Lloyds Vessel Register

says that he is constantly invited to visit vessels and make suggestions looking towards repairs that will continue and in some instances raise the class of a portion of the fleet. He has already made trips to most of the Lake Erie ports for this purpose. Some vessel owners have the custom not only to consult him but to send him minute accounts of repairs made, all of which increase the chances of a better rating and also lightens his survey work. It is found that a great many small owners are now on their feet again and will put their craft in good order. They made some money last season and expect to make some next. And for this reason they are willing to spend liberal sums of money in keeping up their floating property.

Major Symons Corps of Engineers, U. S. A., in charge of this district in the conservancy and improvement of rivers and harbors and other important duties connected with his office is making a report for the government on a bill introduced in Congress by Senator McMillan providing for the reimbursement of the Lake Carriers' Association for money spent in maintaining lights on the Great Lakes and connecting waterways. A synopsis of the bill follows: "Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the sum of twenty-five thousand dollars (\$25,000) or so much thereof as may be necessary, be, and the same hereby is, appropriated out of any money in the Treasury, not otherwise appropriated, to be expended under the direction of the Secretary of the Treasury in reimbursing the Lake Carriers' Association for money actually expended for the lighting of such artificial channels of the Great Lakes and their connecting waters as have subsequently been lighted by the United States."

The range of carrying charges during the season just closed has been wholly without precedent. Early in the season rates were at the bottom, but later there was a sharp upward turn. Lake rates on coal from Buffalo to Chicago opened at 30 cents on April 10th. On May the 5th the advance began and at the close \$1.25 was paid. The rate to Duluth opened on April 26th at 30 cents and gradually advanced to 75 cents, which rate was paid at the close. The average rate on coal for the season to Chicago was 77.01 cents per ton; to Milwaukee 76.03 cents and to Duluth 24.3-5 cents. In 1898 the rates on coal to Chicago were 30.4-5 cents, to Milwaukee 27.1-5 cents and to Duluth 24.3-5 cents. Accordingly there was a substantial doubling of rate in 1899. The average daily rates of freight on iron ore during the season of 1899 were as follows, compared with those of 1898: Escanaba to lower lake ports, 1899, 94 cents; 1898, 50.08 cents. Head of Lake Superior, 1899, \$1.29.05; 1898, 61.0 cents. Marquette, 1899, \$108.5; 1898, 59.8 cents. The average daily wheat rates from Chicago to Buffalo in 1899 were 2.7 cents; in 1898, 1.8 cents. Duluth to Buffalo, 1899, 3.6 cents; 1898, 1.8 cents.

"If the proposed Corliss dam will maintain a high water level in Lake Erie, Buffalo should favor its construction." Such are the quoted views of Capt. J. J. H. Brown, he further stated that "a big mistake has been made in removing the natural dam of the lake by blasting out a deeper channel in Niagara river. The current in the river is too strong, anyway, for anything but powerful boats. With a deep ship lock at Black Rock harbor loaded vessels could go up and down with safety, and whether the dam is built or not the rapids should be got around in this way. "There is no sense in a ship canal from the head of the river to the Tonawandas, for a great deal of the frontage between Squaw Island and the Tonawandas will be wanted for docks, and the water will have to be deepened, anyway. The improvement of the waterway along the Niagara frontier is a live issue in Buffalo, for in that territory we must depend for water front sites for new industries. We cannot move too quickly in this matter. Another live issue is the improvement of the Erie canal and its terminals. I hope the state will soon understand the necessity for owing, controlling and enlarging the docks at the terminals, and of making such changes in the canal as will permit of larger boats being used on it."

"THE Government engineers say that a dam raising the waters of Lake Erie a few feet would raise the waters of Lake St. Clair to about the same extent," the Chicago Chronicle observes. "As Lake St. Clair is six feet higher than Lake Erie, it would seem that the waters of Lake Erie would have to raise six feet before any effect would be produced on the level of Lake St. Clair. Such a change in the Lake Erie level would flood millions of acres of land and submerge miles and miles of dock lines in the harbors. These considerations must affect the practicability of the plans for the Lake Erie dams. But the question can be solved only by experiment."

It is charged by the underwriters that the burning of the steamers R. J. Gordon and Ivanhoe off the Van Buren street pier Chicago on Sept. 28, was the result of a plot, and Eli Dawson was arrested, accused of setting the fire. Dawson was chief engineer of the boats. He waived preliminary examination before Judge Waterman, by whom the bench warrant had been issued, and was held to the grand jury in \$5,000 bonds. Benjamin L. Newman, owner of the burned boats, was the surety. The burned boats were insured for \$10,000 each. The underwriters claim that they were worth but \$7,000. Mr. Newman says that both boats were rebuilt last spring at cost of more than the insurance. Both boats were in the excursion business during the summer, as was the Hinda, should the charge be proved it will be a very serious matter for those concerned in the act of arson.

REPORT OF THE WEATHER BUREAU.

The annual report by Willis L. Moore, Chief of the Weather Bureau of the Department of Agriculture, is always filled with interesting particulars regarding the work carried on by this important branch of the government service.

The closing months of 1898 were specially stormy on the Great Lakes and the New England coast. The most severe storm in the memory of the living swept along the Massachusetts coast, November 26 and 27, causing a loss of at least 200 lives and many vessels. This appalling loss of life was mainly due to the foundering of the Portland, which entailed the death of 150 persons. The captain of this vessel left Boston Harbor at the regular time, as he had been in the habit of doing for years, although storm signals had been flying since eleven o'clock in the morning, and marine interests had been completely notified of the coming storm. The disasters of this storm will not be soon forgotten, and the memory of it gives emphasis to the fact that the warnings of the Weather Bureau should be implicitly heeded by all mariners, for had attention been given to the danger signals, the Portland would, no doubt, be afloat to-day. The extension of the usual time limit of night forecasts from thirty-six to forty-eight hours has marked an important change in the forecast work of the bureau. The forecast officials were directed that beginning March 1, 1899, the period covered by night forecasts should be increased to forty-eight hours. The success already attained has fully justified the issuance of the order. The new station in the West Indian region gave important news of the great hurricane of September 10. The warnings were of the utmost value, and saved vast quantities of life and property. The Weather Bureau work on the Great Lakes has been most successful during the year, and the storm signals kept many vessels in port and prevented many casualties and large loss of floating property.

A convention of Weather Bureau officials was held at Omaha, Nebraska, October, 1898, and the discussions covered a wide range of subjects, all of which had an important bearing upon the practical work of the bureau. The exchange of views and discussion of methods indulged in, were mutually helpful and stimulating. The convention was attended by eighty-three delegates, and a complete report containing all the papers and discussions was printed and extensively circulated. The personnel of the bureau is kept up to its former high level and the discipline in the bureau is admirable.

THE GEORGIAN BAY TRADE.

In reviewing the past season, the Parry Sound Canadian says of the trade at Depot Harbor:

"The movement of grain over the Parry Sound railway will be considerably diminished. The past season has been almost phenomenal in so far as traffic on the road is concerned. Early in the spring, when navigation opened until its close, the boats have been steadily running on the lakes, connecting with the C. A. R. at Depot Harbor and giving employment to a large staff of men and clerical assistants. It is estimated that 12,000,000 bushels of grain have been sent out of Depot Harbor this season, and the elevator now contains another million bushels."

The Owen Sound Times says:

"The season of navigation just closed has been prosperous and successful beyond its predecessors in many respects. From a business standpoint it has been the most prosperous in years. Freight has been plentiful and rates high. Another feature for congratulation has been the comparatively few losses compared with last year. Particularly is this feature marked with respect to the local lines. Last season the Great Northern Transit Co. lost the steamers Pacific and Northern Belle by fire, and with its sister company, the North Shore Navigation Co., suffered several more or less serious accidents during the season. This year, \$100 will cover any injuries the steamers of the Northern Navigation Co. have sustained during the entire season. The C. P. R. fleet has also come through without serious mishap. With the exception of the damage resulting from the conflagration of the Athabasca, in August, nothing worth mentioning has happened. The Manitoba sprung her rudder and spent a day in Collingwood drydock, but the damage was trifling and the trip to Collingwood did not put the big steamer behind in her runs. The Alberta came off clear. The City of Windsor ran on a shoal near Killarney and had to lay up a few days for repairs, but beyond this, had no mishap during the season. The year of '99 will certainly be remembered as one of exceptional freedom from disaster."

ENORMOUS TRAFFIC OF THE "SOO" CANALS—STATISTICAL REPORT.

The annual statistical report of the "Soo" canals affords a striking example of the magnitude, importance and rapid increase of traffic through this gateway for the transportation of products from and to the west and east. The report, which has just been completed, shows that during this season a total freight tonnage of 25,255,810 passed through, an increase of 19 per cent. over last year's traffic, which aggregated 21,234,664 tons.

A few comparisons with the traffic of previous years will be of interest in this connection. In 1881, the first year that a record of the freight tonnage was kept, the total amounted to 1,567,741 tons. In 1885 it had reached 3,256,628 tons. From that period until the present there was a steady increase, with the exception of 1891, when it fell behind a trifle.

As showing the marvelous growth within the last decade, it may be stated that the season's commerce was only about 19,000 tons less than that of the combined years of 1889, 1890 and 1891, and exceeded by nearly 2,000,000 tons the traffic of the years 1893 and 1894.

STATISTICAL REPORT OF LAKE COMMERCE THROUGH CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO, FOR THE MONTH OF NOVEMBER, 1899.

EAST BOUND.

ITEMS.	U. S. Canal.	Canadian Canal.	Total.
Copper, net tons.....	3,759	.....	3,759
Grain, bushels.....	2,275,285	.....	2,275,285
Building stone, net tons.....	3,910	200	4,110
Flour, barrels.....	281,505	26,700	308,205
Iron ore, net tons.....	253,482	.....	253,482
Iron, pig, net tons.....	.....	.....	.....
Lumber, M. ft. B. M.....	5,436	283	5,719
Silver ore, net tons.....	.....	.....	.....
Wheat, bushels.....	3,986,911	131,009	4,117,911
Unclassified freight, net tons.....	617	167	784
Passengers, number.....	83	154	237

WEST BOUND.

ITEMS.	U. S. Canal.	Canadian Canal.	Total.
Coal (hard), net tons.....	16,900	.....	16,900
Coal (soft), net tons.....	94,760	5,300	100,060
Flour, barrels.....	.....	.....	.....
Grain, bushels.....	.....	.....	.....
Manufactured iron, net tons.....	7,253	69	7,322
Salt, barrels.....	.....	.....	.....
Unclassified freight, net tons.....	5,594	3,898	9,492
Passengers, number.....	.....	103	103

East bound freight, net tons.....	485,483
West bound freight, net tons.....	133,774

Total.....	619,257
Total craft through United States canal.....	379
Total craft through Canadian canal.....	136
Total registered tonnage through U. S. canal.....	499,863
Total registered tonnage through Canadian canal.....	21,064
Total.....	430,927

STATISTICAL REPORT OF LAKE COMMERCE THROUGH CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO, FOR THE SEASON OF 1899.

EAST BOUND.

ITEMS.	U. S. Canal.	Canadian Canal.	Total.
Copper, net tons.....	115,643	4,447	120,090
Grain, bushels.....	28,326,850	1,628,585	29,955,435
Building Stone, net tons.....	38,863	200	39,063
Flour, barrels.....	6,112,638	999,584	7,112,222
Iron Ore, net tons.....	13,653,225	1,675,015	15,328,240
Iron, Pig, net tons.....	22,235	1,240	23,475
Lumber, M. ft. B. M.....	1,024,675	13,382	1,038,057
Silver Ore, net tons.....	487	.....	487
Wheat, bushels.....	45,542,364	12,854,971	58,397,335
Unclassified Freight, net tons.....	90,427	31,563	121,990
Passengers, number.....	15,350	8,435	23,785

WEST BOUND.

ITEMS.	U. S. Canal.	Canadian Canal.	Total.
Coal, (hard), net tons.....	732,213	109,068	841,281
Coal, (soft), net tons.....	2,543,397	556,209	3,099,606
Flour, barrels.....	375	1,550	1,925
Grain, bushels.....	15,000	30,500	45,500
Manufactured Iron, net tons.....	187,783	3,327	191,110
Salt, barrels.....	271,569	44,767	316,336
Unclassified Freight, net tons.....	418,908	46,586	465,494
Passengers, number.....	18,314	6,983	25,297

East bound freight, net tons.....	18,338,253	2,281,281	20,619,534
West bound freight, net tons.....	3,913,886	722,390	4,636,276
Total.....	22,252,139	3,003,671	25,255,810

Vessels, number.....	16,480	3,775	20,255
Registered Tonnage, net tons.....	19,021,489	2,936,858	21,958,347

NOTE.—In addition to above traffic 13,000 cords pulp wood and 2,000,000 feet pine logs passed over the rapids, bound for lower lake ports.

COMPARATIVE STATEMENT OF LAKE COMMERCE THROUGH CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO, FOR THE SEASONS OF 1898 AND 1899.

ITEMS.	SEASONS.		Increase Per Cent.	Decrease Per Cent.
	1898	1899		
Steamers, number.....	12,461	14,378	15	.....
Sail Vessels, number.....	4,449	4,776	7	.....
Unreg'd Vessels, No.....	851	1,101	29	.....
Total Passages.....	17,761	20,255	14	.....
Registered tonnage, net tons.....	18,622,754	21,958,347	18	.....
Freight, net tons.....	21,234,664	25,255,810	19	.....
Passengers, number.....	43,426	49,082	13	.....
Coal, (hard), net tons.....	540,843	841,281	56	.....
Coal, (soft), net tons.....	3,235,607	3,099,606	4	.....
Flour, barrels.....	7,778,043	7,114,147	9	.....
Wheat, bushels.....	62,339,996	58,397,335	6	.....
Grain (other than wheat, bushels.....	26,078,384	30,000,935	15	.....
Manufactured & Pig Iron, net tons.....	250,170	214,585	14	.....
Salt, barrels.....	301,560	316,336	5	.....
Copper, net tons.....	124,266	120,090	3	.....
Iron Ore, net tons.....	11,706,960	15,328,240	31	.....
Lumber, M. ft. B. M.....	895,485	1,038,057	16	.....
Silver Ore, net tons.....	.....	487	.....	.....
Building Stone, net tons.....	4,670	39,063	736	.....
Unclassified Freight, net tons.....	623,146	587,484	6	.....

The United States canal was opened May 2 and closed December 18, 1899; season, 231 days.

The following is the comparative statement of the traffic through the Canadian Sault Ste. Marie canal for the seasons of navigation in 1898 and 1899:

Year.	No. of Vessels.	Vessels' Tonnage.	Freight Tonnage.
1898.....	3,675	2,757,630	3,055,287
1899.....	3,769	2,968,009	3,006,664
Increase.....	94	210,379	.....
Decrease.....	.....	.....	48,623

1898—Canal opened April 11th and closed December 9th; total, 243 days.

1899—Canal opened April 26th and closed December 20th; total, 239 days.

THE GRAIN SHOVELING SITUATION.

The officials of the Lake Carriers' Association have not done anything as yet in regard to the grain shoveling contract at Buffalo for the coming season. A meeting of the grain shoveling committee and the elevator men will probably be held before the annual meeting of the Lake Carriers, which will be held at Detroit, Jan. 17.

Here is the scoopers' side, as it is now and as it will be when their representatives appear before the Lake Carriers' Association:

"We want the Lake Carriers' Association to give the contract to the men endorsed by us. We are capable of handling the grain properly. We have resolved not to work under any of the old contractors nor any other man chosen by you unless that man be endorsed by us."

This is the Lake Carriers' Association's side:

"The vesselmen are opposed to giving the contract to the scoopers because of the uncertainty of dealing with workingmen's organization. It is the custom of the association to give the contract to the lowest responsible bidders. In the past the work has been in the hands of James Kennedy and William J. Conners and they have done it properly. If those men bid again or any other individual of responsibility there is no reason why the contract should not be given to the lowest responsible bidder. The vesselmen insist upon the contract being given to a man who can be held responsible for delays or other violations of the contract."

The grain shovelers' union to a man is agreed not to work for the present contractor again, no matter what offer he may make. That leaves the scoopers' union and James Kennedy as the only two bidders known to be in the field, unless there is some truth in the statement that William J. Hurley, Conners' stepbrother, is after the contract.

BETHLEHEM Steel Company, whose advertisement appears in this issue, is distributing a handsome calendar mounted on a card about 12 x 18 inches, with an engraving at the head showing one of their heavy, hydraulic forging presses, working up a hollow shaft from an ingot of fluid compressed steel. On the twelve monthly sheets appear photogravures of representative forgings produced at the Bethlehem plant, the whole being very effective. The calendars have been sent to the company's correspondents and customers, but we are informed that an application to one of their offices will secure a copy for those who have not already received one.

TOLEDO MASTERS' AND PILOTS' ASSOCIATION.

The annual meeting of Toledo Harbor No. 43, American Association of Masters and Pilots, for the election of officers, took place last week, with the following result :

- Captain, Capt. Thos. Meikleham.
 - First pilot, Capt. Frank D. Lamb.
 - Second pilot, E. Doville.
 - Captain's clerk and purser, Capt. L. S. Goss.
 - Chaplain, Capt. Homer Durand.
 - Starboard quartermasters, Capt. E. Sherbno, D. R. Lynn.
 - Port quartermasters, Capt. E. McNutt, J. S. Slavin.
- The newly-elected captain, Thomas Meikleham, was born in Brampton, Ont., 40 years ago. He has had much experience as master of steamers. For four years he was master of the steamer Flora, the steamer State of Michigan one year, and, for the past seven years, has been master of the steamer Blanchard. He is very popular as well as capable. He will make an excellent presiding officer.

First pilot, Capt. Frank D. Lamb, was born in Toledo, and is now 44 year old. He has been engaged in marine pursuits for 30 years, and has had a master's certificate for 20 years. He is energetic, a hard worker for Harbor No. 43, and no mistake was made in honoring him with the position of first pilot.

Second pilot, Capt. E. Doville, was born in Sodus Point, N. Y., 45 years ago. He has been an active business man in Toledo for many years. He is now connected with the Toledo & Lake Erie Sand Co. He has been engaged in marine affairs nearly all his life, and is generally popular.

Captain's clerk and purser, L. S. Goss, is an experienced marine man. He was born in Oswego, N. Y. His last steamboat work was on the steamer Mascott. Capt. Goss was for several years a constable in Toledo.

Capt. Homer Durand, chaplain, is one of the best known men on the chain of lakes. He has owned several lake craft, and is now owner of the schooner P. B. Locke.

Captains E. Sherbno, D. R. Lynn, E. McNutt and J. S. Slavin, who were honored with positions of quartermasters, will, no doubt, fill their positions in the organization with honor and credit.

ASTRONOMICAL DATA.

Astronomical data for January, 1900, furnished the MARINE RECORD by the Washburn observatory :

The evening and the morning sky each have a brilliant planet during the month. In the former Venus as the evening star becomes more and more conspicuous as it draws farther away, apparently from the sun, and also as it reaches a higher, or more northern position. In the morning Jupiter shines in the south east and is the brightest object in the sky when the moon is absent. The planet gains a higher and higher position with reference to the sun until, at the close of the month, it almost reaches the meridian by the time of sunrise. Saturn is following Jupiter as a morning star, but does not rise early enough to become conspicuous until the last of the month. Mars is too near the sun to be seen.

The times of sunrise and sunset at Milwaukee for the month are as follows :

	SUNRISE.	SUNSET.
Jan. 1.....	7:24	4:27
" 11.....	7:22	4:37
" 21.....	7:17	4:49
" 31.....	7: 9	4: 2

The times of the moon's phases are :

New moon.....	Jan. 1, 7:52 a. m.
First Quarter.....	" 7, 11:40 p. m.
Full moon.....	" 15, 1:08 p. m.
Third Quarter.....	" 23, 5:53 p. m.
New moon.....	" 30, 7:23 p. m.

The principal fixed stars visible during the month are :

To the west, the square of Pegasus and the bright stars of the constellation Cassiopeia and Andromeda. To the east, the bright stars of the constellation Orion and Sirius, Procyon, Castor and Pollux.

THE manager of the Union Iron Works at San Francisco, George W. Dickey, in a speech delivered recently before the Society of Naval Architects and Marine Engineers predicted that within a few years they would be building steel ships for the trans-Pacific service 1,000 feet long. The largest steamer now afloat, the Oceanic, is a little over 700 feet long, and the length of the trans-Atlantic liners average less than 650 feet. Mr. Dickey was a designer and builder of the battleship Oregon.

BUFFALO'S LAKE COMMERCE.

Coal shipments from Buffalo for the past year were heavier than in 1898, but receipts of grain show a big falling off. Following is a comparative statement of the receipts and shipments at that port:

Receipts of the principal articles by lake during the seasons 1899 and 1898:

	1899	1898
Flour, barrels.....	8,810,097	10,335,366
Wheat, bushels.....	48,232,016	83,745,760
Corn, bushels.....	53,503,364	69,239,168
Oats, bushels.....	26,423,358	46,135,594
Barley, bushels.....	15,008,226	11,848,093
Rye, bushels.....	2,804,043	6,816,896
Flaxseed, bushels.....	7,542,822	5,754,566
Mill Feed, bags.....	2,939,613	1,774,058
Malt, bags.....	136,062	497,388
Oilcake, bags.....	114,249	77,249
Wool, bags.....	65,463	17,176
Pork, barrels.....	8,050	3,442
Lard, tierces.....	97,038	93,606
Lumber, feet.....	229,623,000	183,732,000
Shingles, No.....	132,026,000	132,162,000
Laths, No.....	3,328,000	5,457,000
Railroad Ties, No.....	131,000	277,000
Iron Ore, tons.....	1,240,179	811,373
Pig Iron, tons.....	25,186	22,436
Copper, tons.....	94,910	94,300
Spelter, plates.....	522,926	161,516
Lead, pigs.....	464,561	459,704

Shipments of coal for 1899, 1898 and 1897:

	1899. Tons.	1898. Tons.	1897. Tons.
Chicago.....	1,024,969	1,073,771	983,177
Milwaukee.....	638,031	534,520	470,553
Duluth.....	393,373	298,808	278,272
Superior.....	313,350	215,212	201,364
Toledo.....	46,517	61,645	62,245
Gladstone.....	33,571	36,000	27,900
Canada.....	54,155	40,355	21,782
Racine.....	34,065	28,680	16,500
Lake Linden.....	19,790	29,743	4,670
Green Bay.....	36,502	28,440	30,325
Manitowoc.....	20,270	23,750	50,650
Marquette.....	11,645	11,200	8,500
Ashland.....	7,500	10,550	4,000
Sheboygan.....	3,300	10,800	700
Kenosha.....	7,475	6,620	275
Saginaw.....	2,800	4,920	8,360
Bay City.....	5,231	4,775	11,959
Port Huron.....	6,260	4,700	6,250
Marinette.....	1,685	1,604	6,250
Washbourne.....	7,800	3,450	850
Portage.....	3,675	7,650	830
Manistique.....	2,610	1,500	.....
Hancock.....	7,250	3,650	3,856
Houghton.....	3,000	2,225	.....
Menominee.....	4,175	1,250	800
Escanaba.....	1,500	1,000	1,400
Sault Ste. Marie.....	10,971	1,640	5,000
Grand Marais.....	300	450	.....
Pequaming.....	.....	100	.....
Waukegan.....	37,550	1,000	.....
Alpena.....	200	125	195
Grand Haven.....	.....	700	1,100
Marine City.....	800	650	800
St. Joseph.....	680	800	700
St. Clair.....	540	888	260
Port Clinton.....	6,260	600	.....
St. Ignace.....	.....	400	300
Muskegon.....	1,350	720	1,300
Algonac.....	500	300	.....
Cheboygan.....	1,830	.....	.....
Totals.....	2,815,165	2,455,191	2,234,329

During the season of 1899, there were delivered at Buffalo, 145,971,847 bushels of grain, against 217,785,511 bushels in 1898—a decline of 71,813,664 bushels. Receipts of grain, including flour as grain, during 1899 were 154,718,944 bushels, against 228,120,877 bushels in 1898—a decrease of 73,338,933 bushels.

Buffalo is coming to the front as an iron ore receiving point. During the last season there was landed at the docks the largest quantity of ore on record. The total amount received was 1,240,179 gross tons, against 811,373 tons in 1898—an increase of 428,806 tons.

There was also a substantial increase over 1898 in the receipts of lumber. The total receipts for 1899 were 229,623,000 feet, against 183,732,000 feet in the preceding year. In many other articles brought down by lake vessels during the last season, there were handsome increases, while in others a decrease may be noticed.

During the season of 1899, the number of vessels entering and clearing at the port of Buffalo was much smaller than in the preceding year; as the following comparative statement will show:

Entered in 1899, 5,174, against 5,621 in 1898. Cleared in 1899, 5,243, against 5,644 in 1898.

Total tonnage entered in 1899, 5,214,386, against 6,129,928 in 1898. Total tonnage cleared in 1899, 5,266,129, against 6,134,809 in 1898.

IN WINTER QUARTERS.

The following is a list of vessels wintering at Bay City: Steamers—Sanilac, Robert Holland, Monohansett, Benton, Miami, Manistique, James P. Donaldson, Arizona, Chas. W. Liken.

Barges—Montana, White & Friant, Algeria, Abyssinia, Twin Sisters, Delaware, C. J. Filmore, B. W. Jenness, Garrett Smith, Amaranth, Oneonto, T. G. Lester, Allegheny, Harvey Bissell, G. K. Jackson, Jas. L. Ketchum, David Ferguson, A. W. Wright, Montmorency, Mary E. Perew, Plymouth, Goshawk.

Tugs—Mocking Bird, Howard, Maud S., Giant, Jas. S. Blazier, Gladiator, Louise, Witch of the West, Fashion, Geo. H. Hand, Lulu Eddy, R. H. Weideman, M. E. Pierce, Sarah Smith, Kate, Wm. H. Seymour, Charles O. Smith, Torrent, Traveler, Winslow, Ella M. Smith, Boscobel, Annie Moiles, Charlton (Canada), Robert Emmett, Niagara, General (new) Salvor, Tempest, Josie Trombley, Geo. E. Brockway, O. W. Cheney, M. F. Merrick, C. B. Thompson, Searchlight.

Yachts—Almeron, Thomas, Hector, G. Irvine, A. C. Pierce.

Steam Yachts—Catherine, Mercy.

Cleveland has had a larger number of vessels in winter quarters other years, but the carrying capacity of the fleet is the largest on record. The winter fleet is made up of seventy-five steamers and twenty-four schooners, making a total of ninety-nine boats.

Steamers—Volunteer, Progress, J. H. Wade, J. W. Moore, Dan Kunz, P. P. Pratt, Geo. J. Gould, Geo. W. Roby, La Salle, J. F. Eddy, Vulcan, S. Mitchell, H. B. Tuttle, Orinoco, Abercorn, R. Richards, M. M. Drake, Pasadena, Iron Duke, Fred Kelley, Massachusetts, Kallyuga, I. W. Nicholas, Coffinberry, E. S. Pease, Desmond, Wetmore, Argo, Preston, Leuty, S. E. Sheldon, Ketcham, Wm. Edwards, Scranton, Chisholm, Philip Minch, S. R. Kirby, Queen of the West, Pontiac, Masaba, Coralia, Mariposa, Mauna Loa, Continental, Specular, R. Emily, McDougall, Maruba, Malietoa, Centurion, Frontenac, Castalia, Eureka, Grecian, Presque Isle, Saxon, Griffin, W. E. Reis, Victory, Joliet, Wawatam, Geo. T. Hope, J. N. Glidden, Briton, Corona, Angeline, Alcona, Pioneer, John Craig, Hiawatha, Corsica, Roman, German, Cambria, Inter Ocean.

Schooners—Chickamauga, Adriatic, Helvetia, Warming-ton, Tasmania, Ida Keith, Vinland, Athens, A. Anderson, Planet, Chattanooga, Fontana, Chas. Wall, Hattie, Brunette, Canton, R. Bottsford, Scotia, Racine, John Martin, Negannee, G. Holland, Magnetic, Alta.

The following is a complete list of vessels wintering at the port of Buffalo. There are 94 steamers, 15 schooners, and 5 barges :

Steamers : Tom Adams, Alaska, America, Alva, Auburn, Avon, Boston, Buffalo, Bulgaria, C. H. Bradley, A. Carnegie, Chili, China, Chicago, Chemung, City of Berlin, City of Bangor, J. B. Colgate, Conemaugh, Commodore, Crescent City, Cuba, S. S. Curry, Fedora, Fiske Jr., Frick, Gratwick No. 1, Gratwick No. 2, Hennepin, Hudson, Huron, Indiana, H. J. Jewett, Juniata, J. B. Ketchum, Lackawanna, Lagonda, Livingston, Lycoming, Thomas Maytham, Mahoning, Samuel Marshall, McWilliams, Fred Mercur, Meriden, Robert Mills, Minneapolis, Mohawk, Montana, Nebraska, J. M. Nicol, North Land, North West, North Star, Northern King, Northern Queen, Northern Wave, Oceanica, H. Oliver, Oswego, H. E. Packer, Portage, Pridgeon, Jr., Queen City, W. D. Rees, Rochester, R. R. Rhodes, Russia, Saranac, Santa Maria, Seneca, Sevona, Shenandoah, Ed. Smith, Geo. Spencer, W. H. Stevens, Starrucca, Susquehanna, Tacoma, Tampa, Tioga, Troy, Vanderbilt, Venezuela, L. C. Waldo, Eber Ward, E. P. Wilbur, Thomas Wilson, G. F. Williams, D. C. Whitney, B. Whitaker, Wotan, Wyoming.

Schooners : Astralasia, Atmosphere, Brightie, Celtic, Connelly Bros., Gardner, Kingfisher, John Magee, S. E. Marsin, Monitor, Ogarita, J. S. Richards, D. P. Rhodes, I. J. Tilden M. Woolson.

Barges : Nos. 118, 129, 130, 134, 133.

BEFORE 1910 Lorain will be making steel vessels of 10,000 tons burden. All the materials that go into the construction of the vessels will be made here from the ore. Stick a pin here.—Lorain Times.



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CLEVELAND, O., JANUARY 4, 1900.

VESSEL owners earned interest on the cost of their floating property last season, next year they will make a little dough, put gilt on the gingerbread as it were. There is enough work already in sight to keep the entire lake tonnage busy in 1900.

SENATOR FRYE, president pro tem of the Senate, said that the Committee of Commerce, of which he is chairman, was ready to report the bill for the creation of the new department of commerce, and he believes the measures will be passed by this Congress, either at its first or second session. Senator Frye says the Hanna-Payne subsidy bill will be reported at an early date.

It is generally understood that anyone elected to the presidency of the Lake Carriers' Association can only hold the office for one term, the question of a re-election after a period of years has not yet come up, for the reason that there is plenty of talent to choose from, and will be for years to come. The two names now being mentioned are Capt. J. G. Keith, Chicago, and Mr. W. C. Farrington, vice president and manager of the Northern Steamship Co. There is never any contest for the honorary distinction, nor will there be a week from next Wednesday when the association opens its annual meeting at Detroit.

THE custom is becoming more prevalent now than formerly to appoint a ship's-husband, also a shore or superintendent engineer to actively manage and facilitate the dispatch of steamers from port to port, commercial agents, brokers, and, or, other representatives of the owners, are all right enough in transacting business along their special lines, but much depends on the practical handling of a fleet, and the ship's-husband, as well as the superintendent engineer, are absolutely essential employees, where a fleet of several steamers are kept constantly at work in the short trade on the lakes, especially is this true to-day relative to the shore engineer.

THE announcement that the Canadian authorities have approved the measures permitting the Connors Syndicate to erect elevators at Toronto, must be considered as a correct and proper step toward the advancement of Canadian commerce, whatever it may be about the people on that side of our borders, they don't seem to take full advantage of their opportunities, and the next best thing is to let others do it for them. Canada has all to gain and nothing to lose even if concession had been ten times more liberal than it is. The loss part of it will be felt at the terminal points on the American side of Lake Erie. Trade and commerce will go where it is facilitated, and it is on this point where the improved St. Lawrence system of canals discounts the now almost obsolete waterways in the state of New York.

THE SHIPPING SUBSIDY BILL.

The Hanna-Payne shipping bill as revised, and later known as the Frye bill, is now almost assured of being passed in this session of Congress. Powerful influences are at work in behalf of the desired legislation, and it is announced that a list of members of Congress who will vote for the bill grows longer every day. It is understood that a number of senators who have hitherto spoken in opposition of the measure are now in favor of it.

There are a number of capitalists who are willing to embark on the adventure of building, owning and managing fleets of merchant vessels under the United States flag, and, if by a modest annual pecuniary assistance the country can bring about this much looked for result, it is the duty of our legislators to facilitate by every means in their power the passage of such measures through Congress, any other view of this subject would simply represent a "dog in the manger" attitude, or a "sour grapes" policy, and measurably so according to the national importance of the subject.

The initiative for the passage of the bill in the House will be directed by Gen. Grosvenor, chairman of the committee on merchant marine, which will report the bill. As a party measure there is no possible way of stopping the bill in the House. In the Senate its opponents could, if they choose, talk it to death. It is extremely unlikely that these tactics will be resorted to.

LAKE BUILT NAVAL TONNAGE.

Secretary Long stated in his recent annual report that negotiations were pending between the United States and Great Britain to overcome the treaty inhibition against building warships on the Great Lakes. It has transpired that the negotiations in which the Secretary of the Navy referred were those carried on by the Joint High Commission, which dealt with Canadian affairs. The American members of that commission put forward a plan for permitting the lake shipyards to build warships, with the understanding that the vessels would not be fitted up and remain on the lakes for naval service. This was accepted by the Canadian officials, with the additional provision that the armor should not be placed on the warships until after they have reached salt water. This provision would have been incorporated in the final arrangement had not the commission failed of an agreement because of the Alaskan boundary trouble.

RE-ORGANIZATION OF THE WEATHER BUREAU CORPS.

Much interest is displayed by the Shipmasters' Association at the general principal lake ports and in other interested channels, in the new civil service project devised by Willis L. Moore, chief of the Weather Bureau, for the better control of that important branch of the public service.

The Weather Bureau, was originally in charge of the signal service, and hence under the control of the War Department. After it had demonstrated the value of its forecasts, and thus established its right to continuing life and usefulness, it was made a bureau of the Department of Agriculture, and placed under control of the secretary thereof. Its progress has been one of continued growth, and the present chief Willis L. Moore, with a full knowledge of its defects, largely due to the fragmentary nature of the legislation under which it operates, has drafted a bill for the re-organization of the bureau, which has been presented in the House by Mr. Wadsworth, chairman of the committee on agriculture.

The best observers and forecasters in the employ of the bureau are the men who have had the most experience. It needs not only intelligent men, with a thorough technical training, in the work, but experience is a most valuable factor. The usefulness of its predictions depends upon their accuracy, and the fact is demonstrated that those who have had the longer experience can give a larger percentage of correct forecasts. Hence, this is a branch of the public service in which the merit system is most advantageous. The bill in question aims to do this. Under it, men will be appointed to the service for fitness, and be retained because of their excellent work and careful attention to duty.

The bill seems to be carefully drawn, and if enacted will be for the best interest of the weather service. A pension feature, in the re-organization project costs the government nothing, and hence there can be no objection to it on that score. Its strict adhesion to the merit feature, both as to appointment and advancement is highly meritorious. Prof. Moore has evolved an excellent system, his management of the bureau has been markedly efficient and successful and

the further improvement of the service seems to be his sole ambition. After a careful perusal and consideration of the different features contained in the bill we can but hope that Congress will enact the necessary legislation forthwith.

FROM a report of the "Commission" on the Chicago river, just published, it is entirely feasible to lower the crowns of the several tunnels crossing the river, remove the center pier bridges and deepen the river so as to give a depth of 26 feet. The Van Buren, Washington, and La Salle street tunnels, can be lowered at an average outlay of about \$250,000 each, the cost to be borne by the traction companies using the thoroughfare, as the railroad companies defrayed the cost of elevating their tracts at grade crossings. The Commission in their report to the mayor and city council state that "the growth of Chicago is inseparably linked with the improvement of the river. Chicago owes her dominant position to the lake, and it is only by improving her harbor that she can maintain her position." A further note of warning is given in the pertinent statement that "resting in security we shall soon repeat New York's experience, and in less than a decade we, too, may be sending commissions about the country seeking the reasons why our commerce has left us." This very argument applies with equal force to a number of other important lake ports.

THE seizure by British warships of several merchant ship carrying cargoes of American goods to Delagoa Bay, South Africa, on the ground that the goods were destined for the Boers, is bringing out that several new contentions on the law of contraband of war are involved in the case. Thus far the discussion has turned on the point that the consignors were Americans, residing in Philadelphia. But it is contended in some quarters that the first question in the case is as to the consignee not the consignor. According to this view, the original shipment might have been in good faith, but so long as the consignment was likely to pass into the hands of the Boers, it was subject to the rules governing contraband of war and could be seized. It is expected, therefore, that when the inquiry is prosecuted by the Ambassador at London, and the Consul at Pretoria, they will have before them, not only the facts as to the original consignment, but also all of the evidence relating to the bona fides of the consignees in having no connection with the Boers.

THE \$33,000,000 Chicago drainage canal is now open, and in the absence of complete data, who is to tell what effect this vast outflow and waste water from Lake Michigan will have on near-by levels. A few more of these artificial Niagaras and we are likely to make valleys out of the lower lakes, thereby reclaiming valuable lands. In a few days the first 500-foot steel steamer ever built on fresh water will be put afloat, and three to six inches draft will mean thousands of tows in the season, to these and similar cargo boats, this slice off lake levels will probably be sent meandering along to the Mississippi, and, as we have said, one or two more such cuts with a prevalence of strong north-westerly weather may be the means of keeping these 400 and 500-foot boats tied up at interval during the cargo carrying season on the lakes, unless they churn their way in ballast trim from port to port.

ANOTHER SHIPBUILDING CONTRACT.

The Craig Ship Building Co., of Toledo, has closed a contract with J. L. Crosthwaite, of Buffalo, and others, for a Welland canal-sized steel steamer. The new boat will be 258 feet over all, 48 feet beam and 18¼ feet deep. She will have triple-expansion engines and steam will be furnished by two Scotch-type boilers 12½ feet in diameter and 12 feet long. She will be a single decked steamer and will be completed about the middle of July. She will be taken to the coast at once, and will be operated in the lumber trade along the Atlantic coast. The cost of the new boat is not given out.

The same parties asked for bids for two boats. Another contract will be closed in a short time, and the chances are that the Toledo firm will get it. The steamer Tampico, which the Craigs are building for Arthur Hawgood, of Cleveland, and others, will be about completed when she is launched, which will be next month. The lake shipyards were never so busy. Aside from all the new vessels that are under way, they have plenty of repair work, and they have about all the business that they can take care of during the winter, also well along into next summer.

CLEVELAND'S LAKE COMMERCE.

The volume of business transacted in Cuyahoga district, which includes Cleveland, and the minor adjacent ports of Fairport, Ashtabula, Conneaut and Lorain, for 1899 shows a wonderful gain over 1898. The \$100,000,000 mark was passed with plenty to spare. The annual report of Collector of Customs Charles F. Leach, prepared by Capt. George A. McKay, marine clerk, shows that the value of shipments and receipts coastwise and foreign for 1899 was \$121,615,183, compared with \$94,173,556 in 1898, a gain of more than \$27,000,000 or more than a quarter of the total of the business of last year. The total number of tons of freight received and shipped in the district during the year was 18,711,207, net tons. The total for 1898 was 15,239,134.

The tonnage handled in Cleveland in 1899 was valued at \$65,659,314, as against \$50,902,500 in 1898. During the season just closed Cleveland received 3,662,137 tons of iron ore and was a close second, Ashtabula taking first place by receiving 3,759,665 tons. Cleveland was far in the lead in coal shipments. During the year 1,470,525 tons of coal were shipped coastwise and 314,896 tons were sent to foreign ports. Including the coal that was used as fuel by steamers the total movement of coal from Cleveland was over 2,000,000 tons. The local docks received 634,270 net tons of lumber during the year, which is valued at \$9,514,000. The principal article in the list are ore, grain, coal and lumber. There are 326 vessels of all kinds owned in the district with a gross tonnage of 336,769 tons.

Number of vessels and the tonnage thereof belonging in the district of Cuyahoga:

Sail vessels, wood, 47, tonnage 31,087; steam vessels, wood, 151, tonnage 85,957; barges, wood, 12, tonnage 3,851; barges, steel, 19, tonnage 14,811; sail vessels, iron and steel, 12, tonnage 38,360; steam vessels, iron and steel, 68, tonnage 162,155; pleasure yachts, 17, tonnage 548.

Total shipments of coal for the district during the year 1899—Coal, cargoes, 3,449,587 net tons; coal, fuel, 613,282 net tons. Total, 4,062,869 net tons. For the year 1898, 3,844,239 net tons.

Total receipts of iron ore for the district during the year 1899 were 11,278,611 gross tons. Total for the year 1898, 8,399,662 gross tons.

Total number of tons of freight received and shipped in the district of Cuyahoga during the year 1899 was 18,712,207 net tons. Total for the year 1898, 15,239,134 net tons.

The total value of shipments and receipts, coastwise and foreign, to and from the district during the year 1899 was: Coastwise shipments and receipts, \$113,141,597; foreign shipments and receipts, \$8,473,586. Total, \$121,615,183. Total for the year 1898, \$94,173,556.

AN ENDORSEMENT OF THE WEATHER BUREAU.

CHICAGO, ILL., December 29, 1899.

At a regular meeting of the Shipmasters' Association, Branch No. 3, held in their hall at Chicago on Wednesday, December 27, 1899, a bill to reorganize and improve the Weather Bureau was read and discussed.

In view of the great value of the weather service to the public, and especially to vesselmen, who, through warnings of storms on the Great Lakes, are enabled to save life and property, on motion the bill was approved by the members present, and the secretary was instructed to endorse the same and to affix the seal of this lodge in attestation of their approval of said bill, known as H. R. Bill No. 3938, and to recommend its adoption by the proper authorities in Washington. And the secretary was further instructed to transmit a copy of these minutes to the Hon. James W. Wadsworth, chairman of the Committee on Agriculture, Washington, D. C., and to each Senator and Congressman from the State of Illinois.

F. B. HIGGIE, Secretary.

Payta, which is situated in Peru, about five degrees south of the equator, is said to be the driest place on earth—the average interval between two showers being seven years; the latest reported shower lasted from 10 p. m. till noon next day. Most of the flora are annuals, the seeds of which remain dormant in the earth for seven years, until a shower comes to cause them to germinate. The natives maintain themselves by the cultivation of the long-rooted Peruvian cotton, which lives in the river beds for seven years without rain. The coast upon which Payta stands has risen 40 feet in historic times.

DETROIT.

Special Correspondence to The Marine Record.

A very important matter to come before the members at the annual meeting of the Lake Carriers' Association, to be held here on the 17th, will be the subject of grain discharging.

There will be nothing on the rivers, or between Toledo and Port Huron, that can have anything to do with the new side-wheeler Tashmoo in the matter of speed. She will walk past some of the so-called fast boats as if they were to an anchor.

Mr. McVittie, of the Detroit Ship Building Co., is the principal in the syndicate that recently purchased the steamers Parks Foster and Ira H. Owen. It is understood, or so reported, that the purchase of these two steel boats was effected at a cost of \$220,000. Mr. Owen, the former owner of these boats, is giving up the ownership and management of vessel property.

Capt. J. W. Westcott, who is marine reporter and general freight and vessel agent here, says that his father, Capt. D. H. Westcott, aged 78 years, who now lives at Marine City, started a wood dock at Lime Island, "Soo" river, in 1847, and operated it until 1849. An uncle of Capt. Westcott's, Capt. Samuel Wood, also had a dock at the foot of Sugar Island, about the same time. These two docks were the pioneer wood docks on St. Mary's river. Capt. J. W. was born on Lime Island.

The admiralty docket for January was called in the United States District Court here this week. The cases number fifty-nine and include a few important complications, the one Detroit is most interested in being that of Charles L. Morley against the steamer Lansdowne, to decide the responsibility for the collision by which both boats were sunk in the Detroit river last summer. A number of minor cases were settled out of court as is usual in almost a majority of the suits, and others were set for trial. The Morley case is docketed for January 30.

The staff of the Detroit Journal, from devil to manager, fraternized at a banquet given last Thursday night, at the Fellowcraft Club. I said last week that Mr. Livingstone, manager of the Journal and an ex-president of the Lake Carriers' Association, was the prince of entertainers, and he maintained his record on this occasion, as usual. All hands had a most enjoyable time and the opinion was unanimous that the Journal was the best managed and edited daily in Michigan, also a money-maker. Of course, the heads of departments threw bouquets at one another and the elixir of life circulated freely.

The new passenger steamer Tashmoo, successfully launched from the Wyandotte yards of the Detroit Ship Building Company, is now at the builders' yards here, foot of Orleans street, where she will be completed and equipped. It is believed that the Tashmoo will carry 4,000 people while drawing but 9 feet of water. Mr. F. A. Kirby, consulting engineer stated that the lines of the new boat had been specially designed to meet the demand for a speedy, roomy boat, which can stand weather, yet be adapted for general service in the changeful water of the river. The Detroit Ship Building Company contracted to build a steamer which would receive the highest possible rating in the underwriters' registry and to furnish a certificate to that effect when delivered to the owners. Every piece of material used has been selected with the terms of the contract in mind. The general plan of the Tashmoo was submitted by Byron W. Parker, and the details have been worked out by Frank A. Kirby, the intent being to secure a speed and elegance not surpassed in any excursion steamer now afloat.

PORT HURON.

Special Correspondence to The Marine Record.

The steamer Arundel has gone into winter quarters at Detroit.

Capt. King, of the barge F. M. Knapp, is making some needed repairs to his vessel.

The former steamer Aurora is in Dunford & Alverson's drydock being transformed into a tow barge.

The steamer Unique of the river route is laid up. The river is blocked above Algonac and lots of ice running.

The shipmasters are making ready for their annual ball, to be given at the Harrington hotel some time in January.

The steamer Green is having a new propeller wheel put on at the Wolverine drydock and the shaft is also being straightened.

Mr. Wm. Jenks, of the Jenks Ship Building Co., at a special election in the 6th ward, was elected alderman over M. N. Buckeridge.

There is lots of boat property for sale here and elsewhere, but the prices are held up to the \$5 lumber rates which it is expected they will earn next season.

When the large boat building at the Jenks steel plant is ready to come down the river the draw of Military street bridge will have to be widened 2½ feet to let her through.

Geo. Miller has been selected by the marine engineers of Port Huron to represent them at the annual meeting of the national association to be held at Washington during the third week of January.

William Carnahan pleaded not guilty in the police court on Saturday to a charge of grand larceny and will have his

examination Tuesday. Carnahan is charged with stealing a number of towlines and other property from vessels in Sarnia bay. He was acting as shipkeeper on the schooner Donaldson and it is alleged stripped the boat of everything of value.

The Jenks Ship Building Co., on Thursday began the laying of the keel of the large new steel boat at its shipyard on Black River. At the Phenix Iron Works, the engine for the smaller of the two boats now being built at the Jenks shipyard is nearly completed. Work on the larger engine will begin at once.

Here are several little items brought to my attention recently which may have skipped the observation of RECORD readers. One-third of the population of the United States is dependent on the Great Lakes for export and import trade. During the past year American ships have carried nearly 40,000,000 tons of freight past Port Huron. More ships pass Port Huron in a year than enter either the port of London or Liverpool. More passengers pass up and down the St. Clair river in a year than enter and depart from the port of New York, the great gateway of the new world. Buffalo transships more grain than any other city in the world.

FLOTSAM, JETSAM AND LAGAN.

The whaleback steamer City of Everett, 1858 tons, has been purchased by the Leibig Manufacturing Co., of Carteret, N. J., and will be used in transporting phosphate from Port Tampa to the company's works. The purchase price was \$200,000.

The steamer Ferdinand Schlesinger, Lake Erie to Milwaukee with coal, forced a passage through the Straits of Mackinac last spring on April 26. Taking it all 'round, season for season, it would appear that May 1 is a good average date to figure on the opening of lake navigation.

There was a big decrease in the movement of grain out of Milwaukee during the past year. In corn alone there was a falling off of over 4,000,000 bushels compared with 1898. During the middle of the season there was much danger of a shortage of coal at that port on account of the brisk ore trade. In October, November and December boats were chartered to carry coal and that product was shipped not only in large quantities but also more rapidly than in the season of 1898. During December alone 237,048 tons of coal were received, while nearly 300,000 tons reached that port during August. The season for coal was also longer, the last cargoes arrived Dec. 28, while a year ago the Parks Foster closed the season on Dec. 21. In 1898 Milwaukee received a total of 1,596,965 tons and last season a total of 1,790,191 tons or an increase of 193,226 tons. The month of August shows the largest receipts in each year being nearly 300,000 tons in 1898 and 278,464 tons last season.

"To the Rescue," is the title of a marine view pictured on a calendar for 1900, recently issued by David Kahnweiler's Sons, the well-known manufacturers of lifeboats and rafts, and other life saving appliances. In the foreground of the picture is represented a lifeboat engaged in picking up some of the sailors of a burning ship seen in the distance. The central figure of interest is a sailor clinging to a spar, to whom a ring buoy, presumably of Kahnweiler make, as they are the best and designed to stand the roughest usage, has been thrown. The picture has great merit in the life action and intensity of purpose that has been imparted to the crew of the lifeboat by the artist. We congratulate Messrs. Kahnweiler on having selected so very appropriate a subject, and on the attractiveness of the calendar generally. As is well known, the firm are makers of metallic and wooden lifeboats, life rafts of several kinds, life buoys, cork cushions, the celebrated Neversink Cork Jacket and Life Belt, and numerous other life saving apparatus.

I mentioned, not many days ago, says a London correspondent, the fact that the great shipbuilding centers here were pretty sure to gain a new record this year, and, although the returns of production for 1899 are not yet fully available, enough is known to make it certain that the output of tonnage for that year will be the largest on record, and may be safely placed at a million and a half tons, or perhaps two hundred thousand tons in excess of the output of last year. It is certain that alike for naval and mercantile purposes there has been a considerably larger quantity of work on hand in the current year than there was in the year 1898. The amount of work on hand at the beginning of October last was not quite so large as the end of December, 1898, although in one or two cases—and notably on Tees-side and at Hartlepool—1899 could show a better record, but on the whole, the volume of work has been fairly maintained, as the following table, compiled from the returns of Lloyd's Register, will make plain. Work in hand in principal shipbuilding districts at different dates:

DISTRICT.	TONS.		
	Dec. 31, 1898.	March 31, 1899.	Sept. 30, 1899.
Belfast.....	184,344	182,430	186,367
West Coast.....	20,895	15,400	11,310
Glasgow.....	306,041	298,608	279,599
Greenock.....	214,859	206,922	187,057
Hartlepool, etc.....	88,681	85,278	96,294
Middlesbro' and Stockton....	99,792	94,534	110,690
Newcastle.....	253,913	257,739	242,613
Sunderland.....	168,109	169,092	166,905

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THE SKIES IN JANUARY. POPULAR ASTRONOMICAL NOTES. (Communicated.)

The eastern evening sky for January will be especially beautiful, by reason of the presence of the brilliant winter constellations, Orion with its two first-magnitude stars, Betelgeuse and Rigel; Canis Minor, with its first-magnitude Procyon, and Canis Major, with the peerless Sirius, and preceding these are the Pleiades and Hyades of Taurus, with the ruddy Aldebaran. Toward the north, from the above-mentioned, are Castor and Pollux, the brightest stars of the Gemini, and approaching the meridian is Capella of Auriga, with its array of bright stars.

The western evening sky looks dark by contrast, though Vega in Lyra, Deneb in Cygnus, and Altair in Aquila are still visible in the early evening, but they are nearing the horizon, and ere long they will be lost to our view. Toward the north, Ursa Major may still be seen climbing the heavens, while on the opposite side of the Pole Cassiopeia is slowly sinking toward the horizon. In the south the large, though by no means brilliant constellation, Cetus, celebrated for its remarkable variable, Mira, is now approaching the meridian. Mira is passing through its invisible phase at present.

Mercury will be a morning star during the month, but will not be at all conspicuous.

Venus will continue to increase in brilliancy and beauty, as she nightly increases her angular distance from the sun, and diminishes her distance from the earth. At the close of the month she will set more than two hours after the sun. Mars is still behind the sun, and hence will be invisible during the month.

Jupiter will be the brightest star in the eastern morning sky. Saturn will also be visible in the morning, but will not be seen at his best by reason of his apparent nearness to the sun.

The increasing daylight in the evening, now quite perceptible, will be further increased during the month, by more than half an hour. But there will be no increase of daylight in the morning until the 8th, when the sun will rise one minute earlier. From that date he will continue to improve in this respect, and at the close of the month will have increased the daylight in the morning by more than a quarter of an hour.

Two groups of small spots came into view the early part of the month by rotation, but continued visible for only three days. Since that time the face of the sun has been free from spots.

The sun is slowly returning from his journey toward the south, and is daily decreasing his southern declination.

D. SATTERTHWAITE.

LIVERPOOL DOCKS.

A cargo boat like the Cevic or a passenger ship such as the Oceanic predicate a graving dock a thousand feet long. Liverpool has already one, the biggest in the world, 950 feet long, and another is being built that will be fully 1,000 feet in length. When we remember that the first dock of Liverpool was built nearly 200 years ago, and what the size of the biggest ship was at that time, it will very easily be understood that the older portions of the Liverpool system consist of small, narrow docks, while those more recently constructed are large and commodious. One may lose count of the number of the docks, but can not be far wrong in saying that there are rather more than a hundred wet and dry

docks, tidal basins and connecting locks all strung along those seven or eight miles of Mersey shore. The smallest dock is not much more than an acre in water area, but the largest, the Alexandria dock, with its three branches, covers upwards of thirty-three acres. The total water area of the Liverpool system is rather more than 385 acres, affording a quay space of over twenty-five miles. Across the river at Birkenhead, there are more docks, giving an additional water area to the whole Mersey estuary of about 165 acres, with more than nine miles of quayage.

IRON ORE PRODUCTION.

The Ishpeming Iron Ore gives figures showing the movement of iron ore from all the Lake Superior ranges. The total is 18,716,745 gross tons, exceeding by 4,687,063 tons the output for 1898. It would require a single ore train having a length of 3,530 miles to hold the year's output, and if made into a 60-pound steel rail, that rail would reach around the globe seven and one-fifth times. The marketed product represents a value of \$60,000,000.

A PIONEER LAKE SAILOR.

Capt. John Langley, aged 55, of St. Joseph, Mich., known in marine circles over the entire chain of lakes as a pioneer vesselman, suffered a stroke of paralysis last Friday evening, rendering him helpless and speechless. It is thought he cannot survive. He sailed the upper lakes for 20 years, and was master of the City of St. Joseph, and the Messenger, operating between St. Joseph and Chicago from 1879 to 1882. During 1888 he served as Government Inspector of Hulls. Owing to ill health he was compelled to give up the position. It was through his personal efforts that the City of Detroit, of the D. & C. Navigation Co., and the Puritan were induced to enter the passenger field from Chicago to St. Joseph in the summer of 1890.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo	3,294,000	447,000	315,000	164,000	1,348,000
Chicago	16,806,000	2,995,000	1,543,000	229,000	69,000
Detroit	731,000	291,000	114,000	18,000	125,000
Duluth	6,736,000	90,000	178,000	351,000	107,000
Fort William, Ont.	2,663,000				
Milwaukee	204,000	1,000		24,000	
Port Arthur, Ont.	234,000				
Toledo	1,357,000	765,000	327,000	10,000	
Toronto	58,000		4,000		55,000
On Canal					
On Lakes					
Grand Total	58,291,000	11,598,000	5,694,000	1,397,000	2,456,000
Corresponding Date, 1898	26,893,000	19,126,000	5,829,000	1,296,000	3,962,000
Increase			221,000	58,000	
Decrease	587,000	763,000			186,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

THE highest ranking officer of the United States Navy, who will retire from active service during 1900, because of age limit, is Capt. W. C. Gibson. Usually from one to four rear admirals are retired annually. During 1901 Rear Admirals McNair and Schley will give up active service.

BRITISH SHIPBUILDING RETURNS.

A summary of the shipbuilding returns of the United Kingdom for 1899, shows that the premier position is held by Messrs. Harland & Wolff, Belfast, Ireland, with a total of 7 vessels, of 82,634 tons, against 7 vessels and 67,905 tons in 1898. Messrs. Wm. Gray & Co. come next with a total of 27 vessels, of 77,501 tons, against 72,323 tons last year. Sir W. G. Armstrong, Whitworth & Co. come third with 12 vessels, totalling 57,543 tons. The largest vessels put into the water were the Oceanic, of 17,250 tons gross, built by Messrs. Harland & Wolff; the Ivernia, of 15,512 tons gross, by Messrs. C. S. Swan & Hunter; and the Saxonia, of about 14,000 tons gross, by Messrs. John Brown & Co., Clydebank.

The following figures show the amount of merchant and war tonnage put into the water from private British yards during the past twelve months, as compared with the seven preceding years:

Launched in 1899 ..	956 vessels of 1,641,783 tons gross.
" " 1898 ..	794 " " 1,488,130 " "
" " 1897 ..	635 " " 1,016,066 " "
" " 1896 ..	743 " " 1,257,339 " "
" " 1895 ..	630 " " 1,028,708 " "
" " 1894 ..	637 " " 1,052,779 " "
" " 1893 ..	545 " " 849,881 " "
" " 1892 ..	702 " " 1,210,657 " "

The launches during the past twelve months have been almost exclusively composed of steamers.

EASTERN FREIGHTS.

Messrs. Funch, Edye & Co. in their regular weekly freight report to the RECORD state as follows:

The last week of the year closed up without satisfaction to owners of open steam tonnage now on our Coast. Prospects for an immediate improvement in grain freights are by no means flattering, as berth rates for this article have latterly continued declining until now reduced to practically starvation rates. The withdrawal of further tonnage for British Government purposes is at last being felt on this market through the shrinkage in offers of prompt boats; this fact, in conjunction with the much reduced stocks of cotton in Liverpool and the North of Europe, may prove the factor by means of which freights on this Coast will be lifted from the rut in which they have been running during the entire Fall season; we devoutly hope this may turn out a fact.

Sail tonnage continues to hold its own, and the year closes on a quiet but firm market, with no apparent prospects of a speedy change. The only exception we can mention is an advance in rates on lumber from the East to the River Plate, for which \$10 and \$10.50 has been paid, marking the highest point reached this year.

It is believed the Kearsarge will be placed in commission this month. Orders have been issued from the bureau of navigation to make up the enlisted force for the ship. Three officers have been assigned to duty on the ship, Capt. W. M. Folger, who will command; Lieutenant Commander G. A. Merriam, and Lieut. Emile Theiss, who will be in charge of the engineer department. It is probable the ship will be placed in commission at the Norfolk navy yard, while the Kentucky, which will be ready for sea in a few weeks, will be commissioned at the New York navy yard. Three officers have been detailed for duty on the Kentucky also. These are Capt. C. Chester, who will command the battleship; Lieutenant Commander Karl Rohrer, the executive officer, and Lieut. Martin Revington, who will be at the head of the engineer department.

THE CHICAGO DRAINAGE CANAL.

On Tuesday morning water was turned into the \$32,000,000 drainage canal at Chicago and began to flow toward Lockport, where it will fall into the Desplaines river, and thence through the Illinois and Mississippi rivers to the Gulf of Mexico.

The engineers of the sanitary district have cut a channel to carry 300,000 cubic feet of water a minute, but today the water was allowed to flow into the canal at the rate of only 50,000 cubic feet of water a minute. The effect of turning 300,000 cubic feet of water a minute into the empty canal would be like the bursting of a reservoir, and would tear away every bridge over the canal and wreck the controlling works at Lockport. Therefore, the water will be turned in gradually. Probably a week will elapse before the canal is full of water and is carrying away the sewage that now flows into the Chicago river.

As an engineering triumph the great interest in the Chicago canal lies in the fact that it disposes of the sewage of the city in a manner contrary to the laws of nature and contrary to the laws of gravity. Were Chicago situated in the Illinois river there would be no significance in the plan to forever turn the sewage of the city down the valley of the Desplaines and Illinois rivers; but the canal restores topographical conditions existing in prehistoric times, when the overflow water of the Great Lake region flowed down the Mississippi valley, by making a cut through the glacial drift and rock between Chicago and Lockport of an average depth of about 35 feet, to once more restore the gravity flow from Lake Michigan to the Desplaines and Illinois valleys.

While the Chicago river has been deepened and widened to increase its flow and capacity, the canal itself, properly speaking, begins at the south branch of the Chicago river, at Robey street, and continues southward as an entirely artificial channel until it reaches the controlling works at Lockport, a distance of twenty-eight miles. At Lockport the channel widens to about 500 feet into a windage basin. The fall from the mouth of the Chicago river to the Lockport works is only seven feet, so that the flow of water in rapidity and volume through the Chicago river to the canal is entirely controlled by the trap dam and controlling works, situated at the Lockport terminus, the fall south of the controlling works being abrupt and about 40 feet in the next four miles. By means of the controlling works the water can be suddenly turned off as emergencies may demand.

The first work done on "shovel day," Sept. 3, 1892, on the rock cut below Lemont on the line between Cook and Will counties; so that a little over seven years have been consumed in the entire work, involving an outlay of about \$33,000,000.

Up to the present time and, indeed, for the past 15 years, the entire sewage of the city of Chicago which empties into

the Chicago river has, as a matter of fact, been flowing down the Desplaines valley and into the Illinois and Mississippi rivers in a highly offensive condition and in a volume of about 40,000 cubic feet per minute. It is this same flow of sewage that is to pass down the Illinois valley, but diluted by a tremendous flow of water from Lake Michigan, increasing the total volume to 300,000 cubic feet per minute, rendering the sewage harmless before Joliet is reached, if the contention of the most eminent chemists and bacteriologists is correct.

Later on—in six or seven months—when the system of intercepting sewers now in process of construction in Chicago is completed, the sewage, now flowing into Lake Michigan, will be diverted into the Chicago river and the canal, so as to increase by the addition of 6,000 feet per minute of sewage the amount now going down the Illinois river.

The plan of the Chicago canal can hardly be said to have been original with any one man. It has been a development, and many men can justly lay claim to having played a prominent part in this great public work. The sanitary district was organized under the requirements of law, by an affirmative vote of the people within the district, in November, 1890, and comprises 182 square miles. The sanitary district trustees are elected by popular vote, and form an independent organization, separate and distinct from the municipal government of Chicago. The district has already issued \$13,990,000 of bonds, all payable in currency.

CANADIAN SHIPPING STATISTICS.

An appendix to the annual report of the department of marine recently issued shows that the total number of vessels remaining on the register books of the Dominion on December 31, 1898, including old and new vessels, sailing vessels, steamers and barges, was 6,643, measuring 693,782 tons register, being a decrease of 41 vessels and a decrease of 37,972 tons register, as compared with 1897. The number of steamers on the registry books on the same date was 1,909, with a gross tonnage of 267,237 tons. Assuming the average value to be \$30 a ton, the value of the registered tonnage of Canada on December 31, last, would be \$20,813,460.

The number of new vessels built and registered in Canada during last year was 278, measuring 24,522 tons register. Estimating the value of the new tonnage at \$45 at ton gives a total value of \$1,103,490 for new vessels.

Lindsay, Ont., and Dawson City, Yukon, were established ports of registry during last year.

No. vessels and No. of tons on the registry books of Canada December 31, 1898, gives a total for the several provinces of 6,643, of which 1,909 were steamers having a gross tonnage of 267,237, the net tonnage of sail and steam combined shows a total of 693,782 tons.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD).

Shipping—Proceeding for Forfeiture of Vessel—Measure of Proof Required.—A proceeding under Rev. St., Sec. 4377, for the forfeiture of a vessel and cargo for violation of her license by carrying smuggled goods, is a civil suit, and the government is not required to prove the allegations of its libel beyond a reasonable doubt, but by not more than a preponderance of evidence. Whether Rev. St., Sec. 909, is applicable to the case, *curæ re.* The Good Templar, 97 Fed. Rep. (U. S.) 651.

Common Carriers—Accepted Risks—Dangers of the Seas.—Where a common carrier assumes to deliver a cargo in good order, "the dangers of the seas only excepted," the failure to do so casts upon him the burden of proving that the loss was caused by the excepted risk; and in the absence of satisfactory proof thereof, the court is justified in finding for the libellant, even if the cause of the disaster does not clearly appear. Insurance Co. of North America vs. Easton & McMahon Transp. Co., 97 Fed. Rep. (U. S.) 653.

Carriers of Passengers—Liability for Loss of Baggage—Steamship Companies.—A passenger steamship company is not liable as an innkeeper, and under the general rule applicable to carriers, it is not liable for the loss of a passenger's baggage, where the loss is not occasioned by some particular breach of duty or negligence on the part of its servants, unless the baggage has been delivered to and taken into the exclusive custody of its officers or servants. The Humboldt, 97 Fed. Rep. (U. S.) 656.

Master and Servant—Personal Injury of Employee—Loading vessels—Independent Contractor.—The hatch of a steamer, through which stevedores were loading it by means of a fall from the boom of a derrick, was 20 feet long, and had across it to support the covers, two beams, 6 feet from the ends. According to custom, the carpenter, arriving in port, had removed the bolts which fastened the beams so that the stevedores might manage the beams as they desired, as for the purpose of loading they had the entire management of the hatches and beams; and, before commencing loading, their foreman had the after beam removed, but left in the forward beam. The derrick was so arranged that the vertical line dropped through the after part of the hatch, but D. and co-laborers, working for the stevedores in the hold, not being able to move forward as far as desired a cask which had been lowered, and was somewhat forward of the hatch, attached the fall thereto, and gave the signal to raise it, execution of which brought the rope against the forward beam and threw it from its place onto D. Held, that there was no improper equipment of the ship, or fault on its part, but any negligence was that of D., his co-laborers and the foreman of the stevedores, all fellow servants. The Picqua, 97 Fed. Rep. (U. S.) 649.

A SOUTH HAVEN, Mich., subscriber writes: "I wish to inform you that I have sold through the columns of the MARINE RECORD the Myrtie M. Ross to Mr. Wm. E. Hall, proprietor of the Hall House, Mt. Clemens, Mich. Success to the RECORD. I wish you a happy and prosperous New Year.

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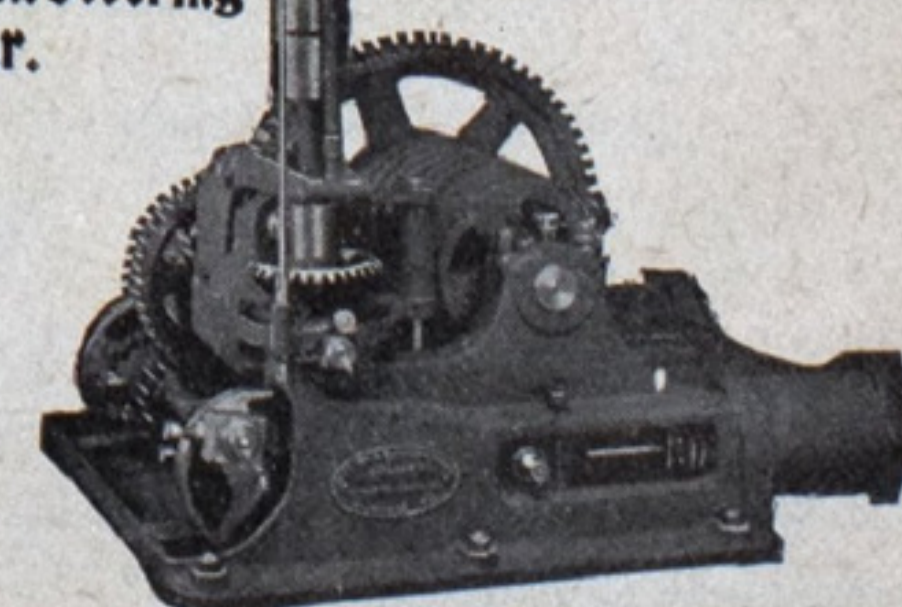
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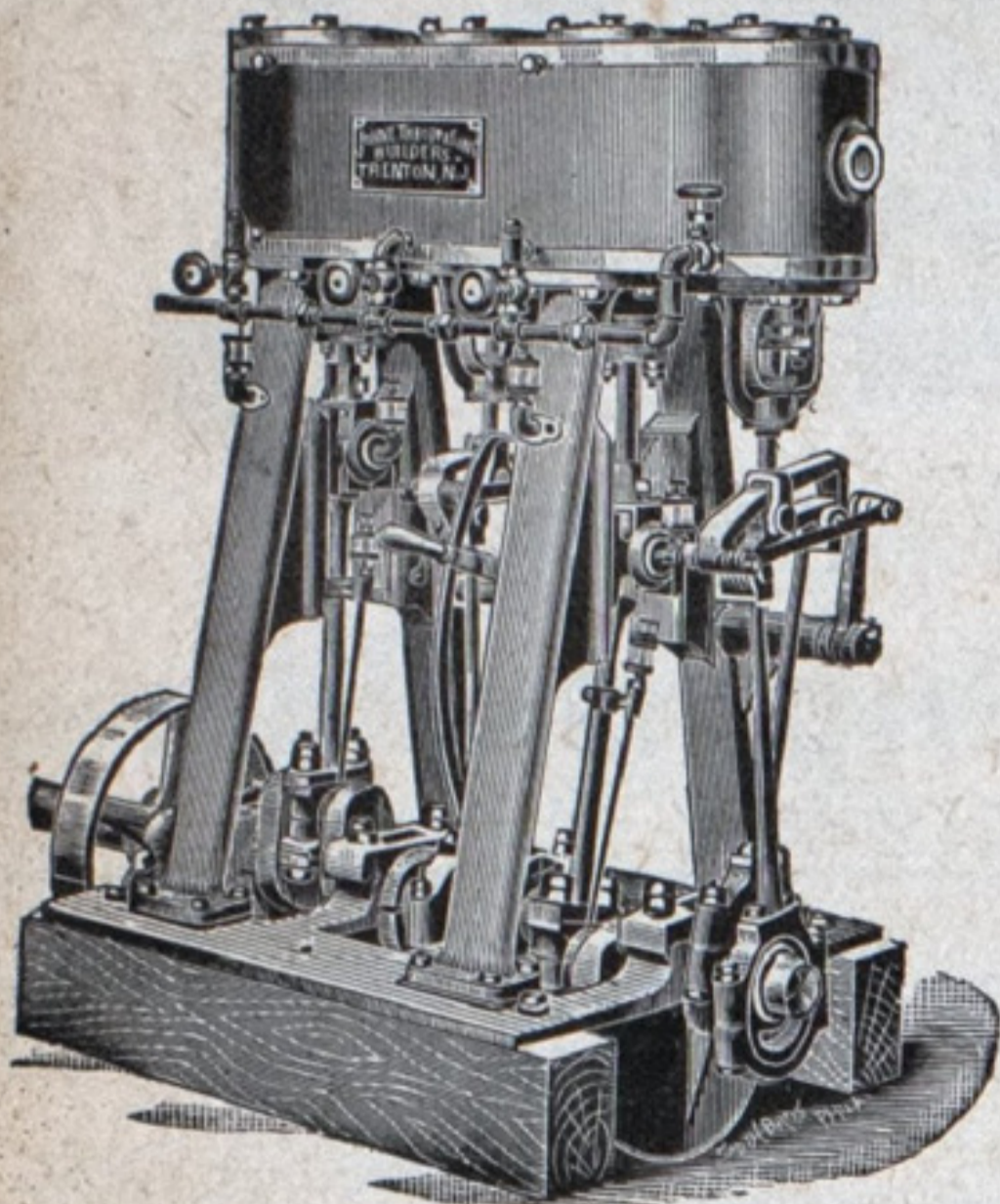
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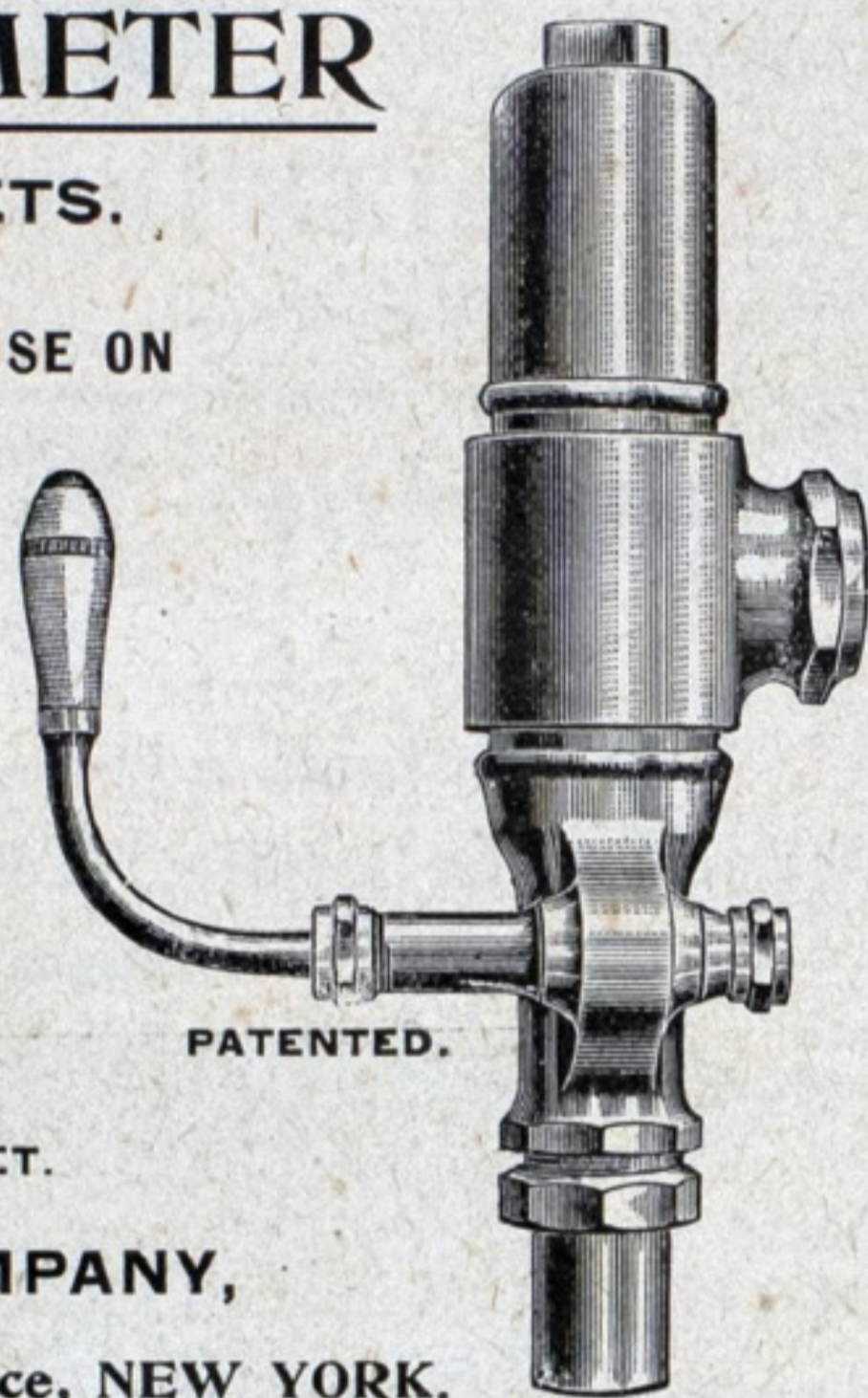
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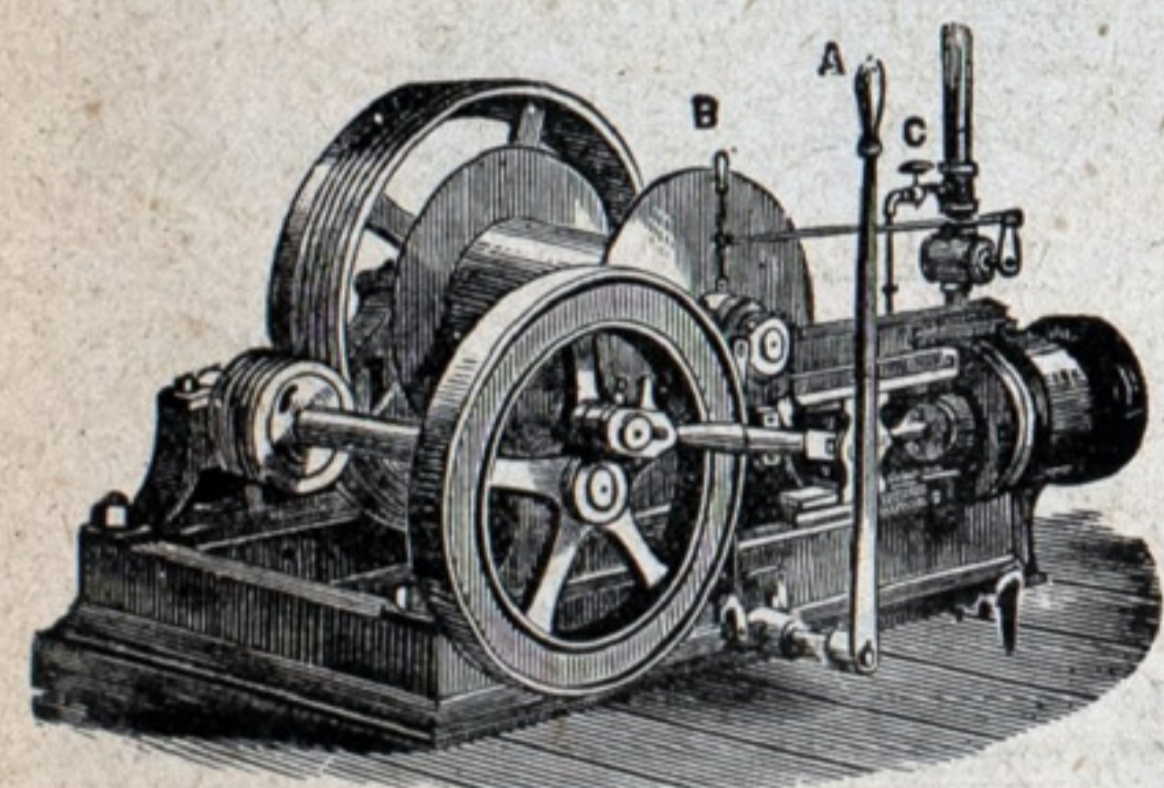
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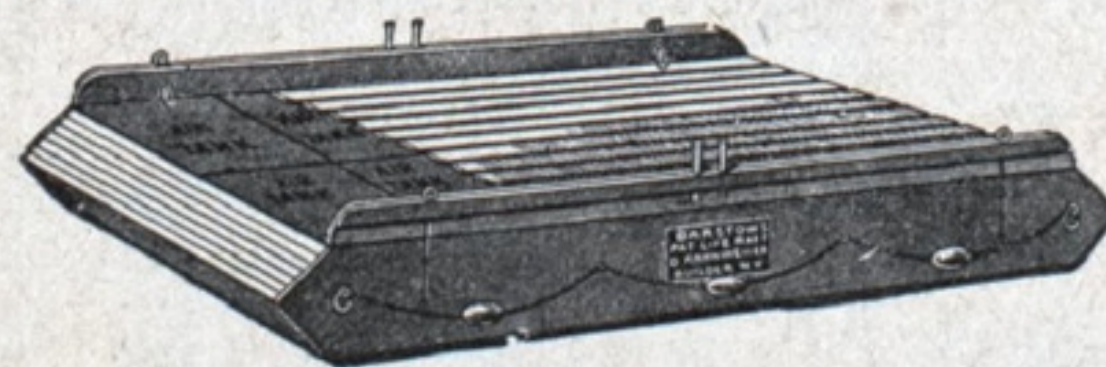
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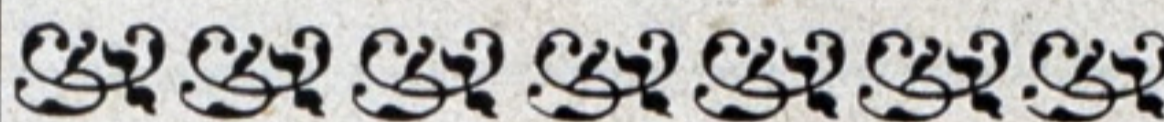
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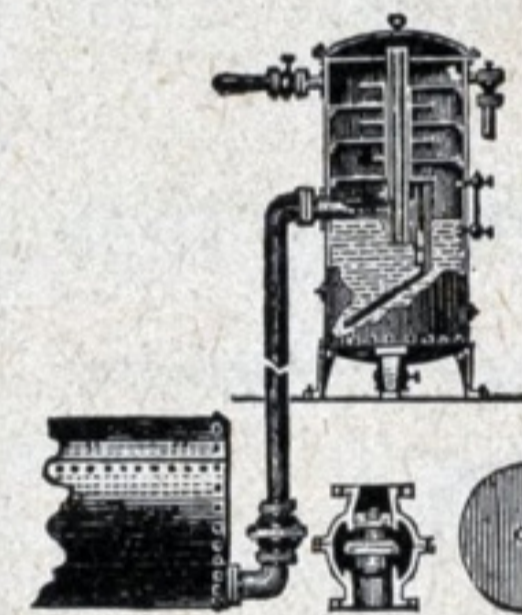
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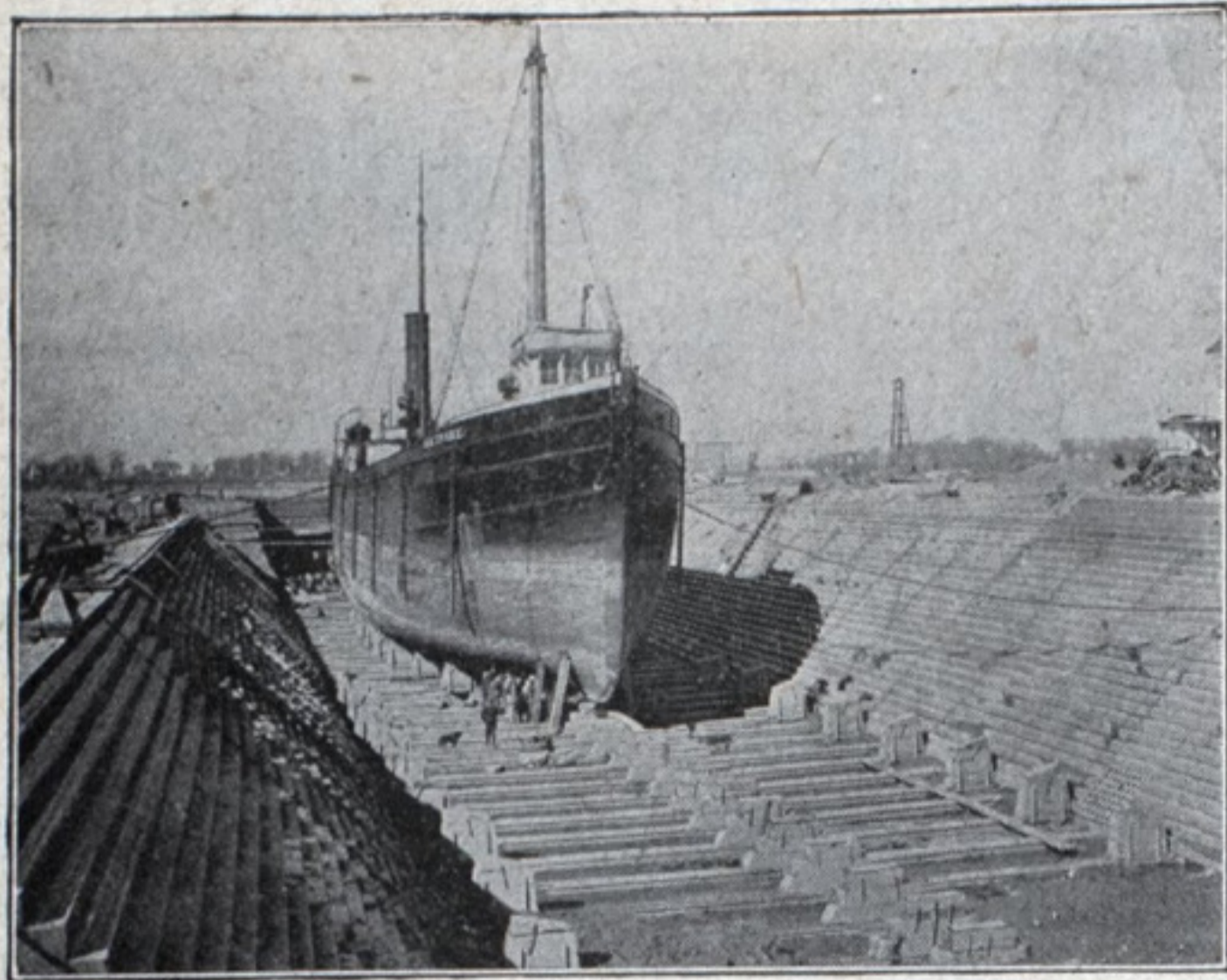


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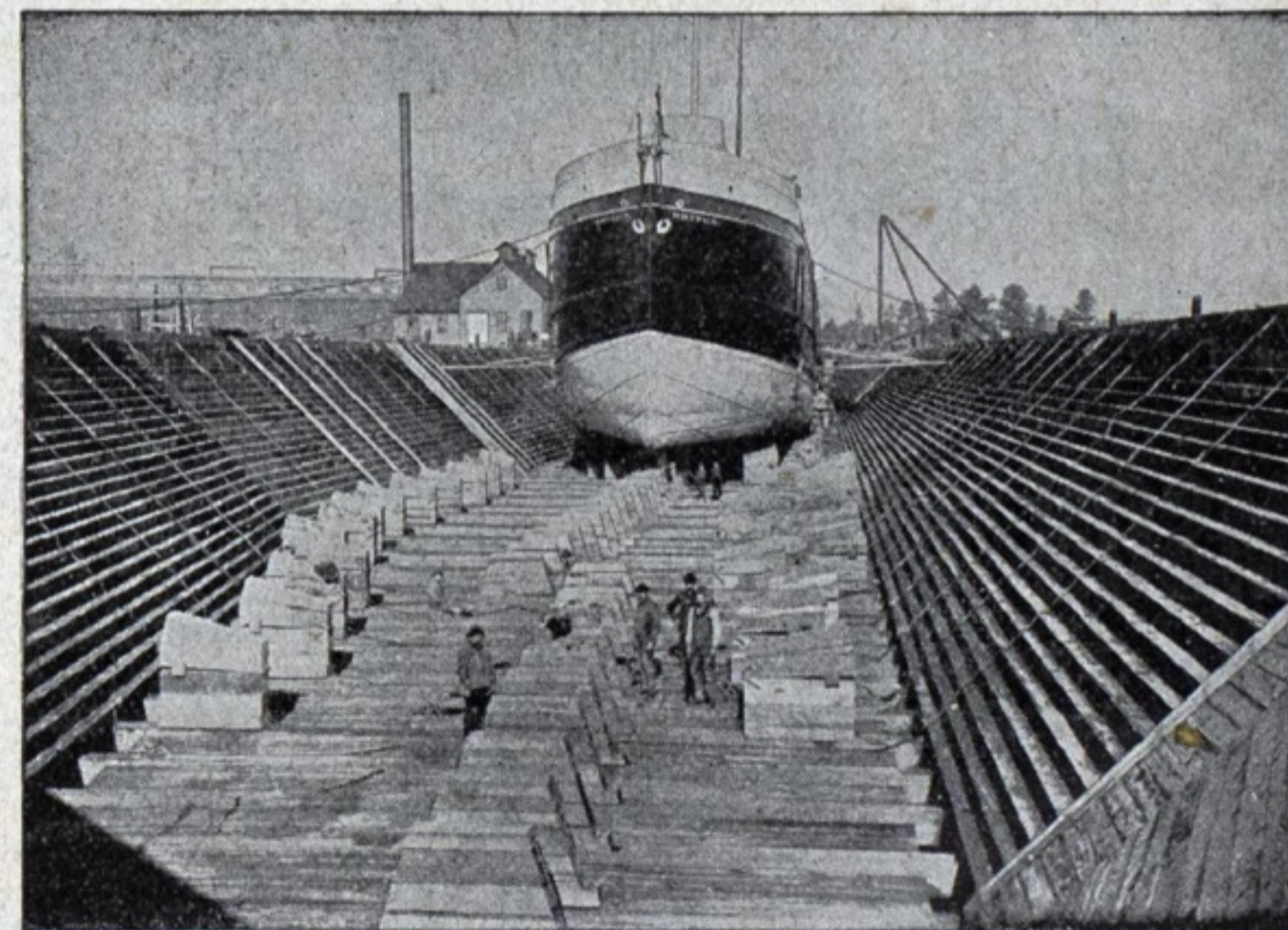
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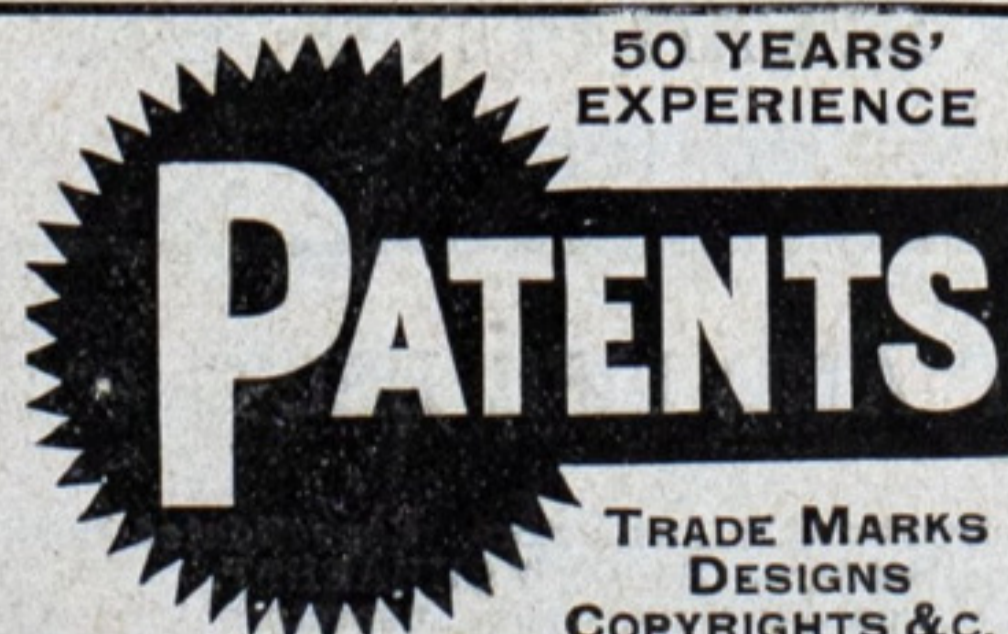
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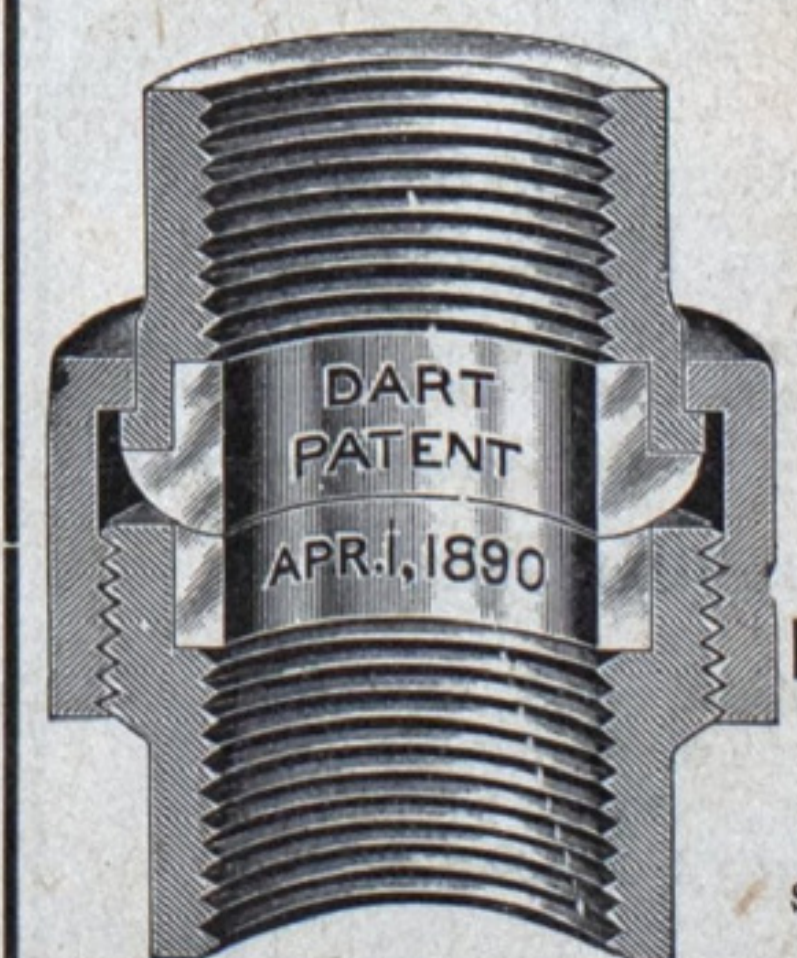
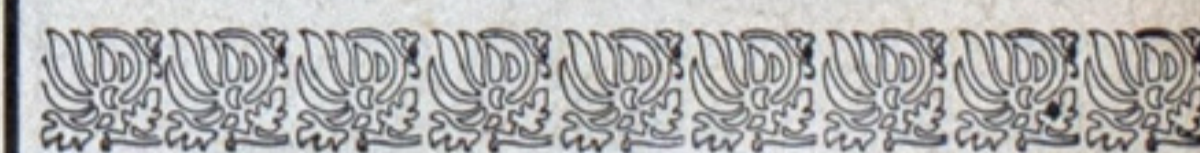
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